

```

1 CTGGCTCCAG GTCTGACTCA GTCCACTACA AGCTAGACGG TCTTCTTAAA
51 GCACCAACAT TACTTGAGTC TTTGGATAAA ATTGAGAAAA GAGTCTACAA
101 GTATTGTGGA CTCTACAGGA GGCAGGAGGC TGACAACTGG CAGTAAAGAC
151 AAAGATGTCA GGCCTGCGGC CCGGCACTCA AGTGGACCCT GAGATTGAGC
201 TTTTGTGAAA GGCTGGAAGT GATGGAGAGA GTATTGAAA CTGTCCCTTT
251 TGCCAACGCC TTTTCATGAT CCTCTGGCTT AAAGGAGTTA AATTTAATGT
301 GACCAACTGTT GACATGACCA GAAAGCCTGA AGAACTAAAG GACTTAGCCC
351 CAGGTACCAA TCCTCCGTTT CTGGTGATA ACAAGGAGTT GAAAACAGAC
401 TTCATTAAAA TTGAGGAGTT TTTAGAACAA ACCCTGGCTC CTCCAAGGTA
451 CCTCACCTG AGTCCCAAGT ACAAGGAGTC TTTTGATGTG GGCTGTAACC
501 TCTTTGCCAA GTTTTCTGCA TACATTAAGA ATACACAAAA GGAGGCAAAT
551 AAGAATTTTG AAAAATCTCT GCTCAAAGAA TTCAAGCGTC TGGATGACTA
601 CTTAAACACC CCACTTCTGG ATGAAATTGA TCCAGACAGT GCTGAGGAAC
651 CCCAGTTTC CAGAAGACTA TTCTTGATG GGGACCAGCT AACACTGGCT
701 GATTGTAGCT TGTTACCCAA GCTGAACATT ATTAAAGTTG CTGCCAAGAA
751 ATATCGTGAC TTTGACATTC CAGCAGAATT CTCAGGAGTC TGGCGTTATC
801 TCCACAATGC CTATGCCCGT GAAGAATTTA CCCACACGTG TCCTGAAGAC
851 AAAGAAATTG AAAATACTTA CGCAAATGTG GCTAAACAGA AGAGTTAGGA
901 GAGCTCTTAC AGGAGAAAAG GCTATATTTG TGATCAGATT TACTTATTG
951 ACAATATTAGA AAGGTTTTTG CAAATAAGAA TATGAAAAAT ACTGTTTCTT
1001 CTATCCAAC CTCTTATGAA AAGGAACTCT GTATTTTCTA TTAGCCATAA
1051 ATAATCTGTC CACTGTATTT TACAGGTCTT CATACTTTTA CTTAATTTTC
1101 TTTATCTGTA TGGCAAACCA CTGCAATCCT GAATGACATG GAAAGCATCA
1151 CAATCTTTTG CCCTTTGCTT GAATTCCTGG AATGCATACA TATAAGCTAA
1201 ACAGATGTCT GCAGTTATAA ATGTCATAAG TAGAGGTACA ATCTCACCTT
1251 GCTCCTTAGA AACATTTCCA TATAAATCGC TAAAATAATT TCACATTTTT
1301 GTAGTTTAA TATATACATG AGTTTATTTT TGATATAAAT AATAAATACA
1351 GAGAGTGAGC ATATCAGAGA GGCAAATTC TAAAGAATGA TTTTAAAT
1401 CAGTCTAGG AAGAGCTCAA GATCAATTGG TCATAGAACA GCATTTGACG
1451 CCTAGAAC TAAGACCTC ATGGTCAGAG ATGAGAATGT AGCCTTTGTG
1501 ACCAGATTAT ATTATTTTAA AATGAAGAAG CACTCATTAA ATAAACATA
1551 ATTTTAAAA ACAATATAAG AAACAAAGTC AACTGAATCT TTTATTCATA
1601 GAAATGAAAA GGAAATATAA AACTGTGGCT GACCAAAAGG TCTTCTTGTT
1651 GTCCATAAAA GGATAAGGTA AACAGTCCTT AGATAATTAC AAAACTTTCT
1701 ACAAAGTTA AAATGTTACA TTAATATACG TATTCAGATT CACTTGTTAA
1751 AGTACTCTTA AATCATTCAA ATCTGGAAC AAAAGCTGAA CTTAACTCTT
1801 GCTCCCTCAA AAGAGAAACA CAAGCATAAG TGCAGCTTCA AAAAAGGAAA
1851 ATATTTTAGG CTTTGGTGGA AGGGTGGAGT TTAGATAAAA TTAAATGAA
1901 GTAGCGTTTT AATAGGTTCA AAGAAAAGTA AGGCAATGAG CAAACTCAAA
1951 GTACTGTCCT TGAAAACCAT AGAGTCAAGA TAAATGTATA GTGTATGGTT
2001 AGGTGGCAGA GAAATGCAAT CATGTTGATA ATCTTTGAGA TACATCCTGT
2051 CATCAGTATA TTTCAGAATA CATGCAATGC ACTAGCAAGT TACAATTGAT
2101 AGAATACATT TGAAATGTTA AATGAAATAA GCCAGGCACA GAAAGACAAA
2151 CACCACATGA TCTCACTCAT ATGTGGAATT TTAATAAGTT GATCTCACTC
2201 ATATGTGGAA TTTTAAAAAG TTGATCTCAC ACAAGTAGAG GGTAGAATCG
2251 TGGTTACCAG GGGCTAGGGA GAGAAAGAAG GCAGAGGCAC TGAAAGATGT
2301 TGGTCAATGG GTATAAAGTT ACACCTAGGA AGAATAAATT TTGGTATTCA
2351 CCACAGTAGG GTGACTATAG CAAATAATAA TGTAGCATGT ATTTCAAGAT
2401 AGCTAGAAAA GCAGGTTTTT AAATGTCACC ACAAAGAAAT AACAAATGTT
2451 TATAGTGGTG GATATGGTAA TTACGCCTAT TTGATCATT TACTGTGTGT
2501 ACATGCATTG AAACACCACA TTGTATCCCA TATATATGTA CAATTATGTG
2551 CCCATTATAC ATTTAAAAAA TAAATTTTAA AAACCTTCAA AAAAAAAAAA
2601 AAAAAAAAAA AAAAAAAAAA AAAAAAAAAA AAAAAAAAAA AAAAAAAAAA
2651 AAAAAAAAAA AA (SEQ ID NO:1)

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# FEATURES:

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5'UTR:      1-154
Start Codon: 155
Stop Codon:  896
3'UTR:      899

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**HOMOLOGOUS PROTEINS:**

Top BLAST Hits:

	Score	E
CRA 18000005108129 /altid=gi 4557020 /def=ref NP_001280.1  chlo...	505	e-141
CRA 18000005108132 /altid=gi 3121853 /def=sp O15247 CLI2_HUMAN ...	504	e-141
CRA 1000682328819 /altid=gi 7330335 /def=ref NP_039234.1  chlor...	334	3e-90
CRA 18000005238101 /altid=gi 6685319 /def=sp Q9Y696 CLI4_HUMAN ...	334	3e-90
CRA 103000001516844 /altid=gi 8393147 /def=ref NP_058625.1  chl...	334	3e-90
CRA 1000685680369 /altid=gi 7304963 /def=ref NP_038913.1  chlor...	333	4e-90
CRA 268676875 /altid=gi 7592636 /def=dbj BAA94345.1  (AB035520)...	332	1e-89
CRA 18000005208220 /altid=gi 6685295 /def=sp Q9Z0W7 CLI4_RAT CH...	330	7e-89
CRA 18000005222663 /altid=gi 4588524 /def=gb AAD26136.1 AF10919...	328	2e-88
CRA 335001114793760 /altid=gi 12232044 /def=gb AAG49367.1 AF323...	326	6e-88

BLAST dbEST hits:

	Score	E
gi 3597999 /dataset=dbest /taxon=9606 ...	1063	0.0
gi 10971515 /dataset=dbest /taxon=96...	827	0.0
gi 4630214 /dataset=dbest /taxon=9606 ...	823	0.0
gi 9867186 /dataset=dbest /taxon=960...	646	0.0
gi 1295759 /dataset=dbest /taxon=9606 ...	607	e-171
gi 1950308 /dataset=dbest /taxon=9606 ...	605	e-171
gi 3752728 /dataset=dbest /taxon=9606 ...	543	e-152

**EXPRESSION INFORMATION FOR MODULATORY USE:**

library source:

From BLAST dbEST hits:

gi|3597999 uterus  
gi|10971515 lung  
gi|4630214 germ cell  
gi|9867186 liver  
gi|1295759 parathyroid gland  
gi|1950308 prostate  
gi|3752728 placenta

From tissue screening panels:

Whole liver

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1 MSGLRPGTQV DPEIELEFVKA GSDGESIGNC PFCQRLFMIL WLKGVKFNVT
51 TVDMTRKPEE LKDLAPGTNP PFLVYNKELK TDFIKIEEFL EQTLAPPRYP
101 HLSPKYKESF DVGCNLFASF SAYIKNTQKE ANKNFEKSLI KEFKRLDDYL
151 NTPLLDEIDP DSAEPPVSR RLFLDGDQLT LADCSLLPKL NIIKVAACKY
201 RDFDIPAEFS GVWRYLHNAY AREEFTHTCP EDKEIENTYA NVAKQKS (SEQ ID NO:2)

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# **FEATURES:**

## **Functional domains and key regions:**

[1] PDOC00001 PS00001 ASN\_GLYCOSYLATION  
N-glycosylation site

48-51 NVTT

[2] PDOC00005 PS00005 PKC\_PHOSPHO\_SITE  
Protein kinase C phosphorylation site

Number of matches: 4

1	55-57	TRK
2	103-105	SPK
3	127-129	TQK
4	169-171	SRR

[3] PDOC00006 PS00006 CK2\_PHOSPHO\_SITE  
Casein kinase II phosphorylation site

Number of matches: 7

1	8-11	TQVD
2	22-25	SDGE
3	50-53	TTVD
4	127-130	TQKE
5	162-165	SAEE
6	180-183	TLAD
7	228-231	TCPE

[4] PDOC00007 PS00007 TYR\_PHOSPHO\_SITE  
Tyrosine kinase phosphorylation site

233-239 KEIENTY

[5] PDOC00008 PS00008 MYRISTYL  
N-myristoylation site

Number of matches: 2

1	3-8	GLRPGT
2	44-49	GVKFNV

**BLAST Alignment to Top Hit:**

>CRA|18000005108129 /altid=gi|4557020 /def=ref|NP\_001280.1| chloride  
intracellular channel 2 [Homo sapiens] /org=Homo sapiens  
/taxon=9606 /dataset=nraa /length=243  
Length = 243

Score = 505 bits (1286), Expect = e-141  
Identities = 242/243 (99%), Positives = 242/243 (99%)  
Frame = +2

Query: 155 MSGLRPGTQVDPEIELFVKAGSDGESIGNCPFCQRLFMILWLKGVKFNVTTVDMTRKPEE 334  
MSGLRPGTQVDPEIELFVKAGSDGESIGNCPFCQRLFMILWLKGVKFNVTTVDMTRKPEE  
Sbjct: 1 MSGLRPGTQVDPEIELFVKAGSDGESIGNCPFCQRLFMILWLKGVKFNVTTVDMTRKPEE 60

Query: 335 LKDLAPGTNPPFLVYNKELKTDFIKIEEFLEQTLAPPRYPHLSPKYKESFDVGCNLFAKF 514  
LKDLAPGTNPPFLVYNKELKTDFIKIEEFLEQTLAPPRYPHLSPKYKE FDVGCNLFAKF  
Sbjct: 61 LKDLAPGTNPPFLVYNKELKTDFIKIEEFLEQTLAPPRYPHLSPKYKECFDVGCNLFAKF 120

Query: 515 SAYIKNTQKEANKNFEKSLKKEFKRLDDYLNTPLLDEIDPDSAEPPVSRRLFLDGDQLT 694  
SAYIKNTQKEANKNFEKSLKKEFKRLDDYLNTPLLDEIDPDSAEPPVSRRLFLDGDQLT  
Sbjct: 121 SAYIKNTQKEANKNFEKSLKKEFKRLDDYLNTPLLDEIDPDSAEPPVSRRLFLDGDQLT 180

Query: 695 LADCSLLPKLNIKVAACKYRDFDIPAEFSGVWRYLHNAYAREEFTHTCPEDKEIENTYA 874  
LADCSLLPKLNIKVAACKYRDFDIPAEFSGVWRYLHNAYAREEFTHTCPEDKEIENTYA  
Sbjct: 181 LADCSLLPKLNIKVAACKYRDFDIPAEFSGVWRYLHNAYAREEFTHTCPEDKEIENTYA 240

Query: 875 NVA 883  
NVA  
Sbjct: 241 NVA 243 (SEQ ID NO:4)

1 AGAACTAATC ATGGTTCCTG ATACAGACGC CAAAACAAGG AAGTGATCTG  
51 TTCCAGTCCA AGCTTCCAAG AAATAAAGAA CTAGGTGGGG CACACTAAAC  
101 AAGCCCCCAG ACTCAACCAC CCCAGTGAAC ATTCCCTGGT TGTTAGAGAGA  
151 AGTGAAATTT GCAACCCAGA ACAGAAATCT GGCTGTGTGA GCAGTAGGAT  
201 TGGGGGTGGA AACATTTAAT GAAGTACAAT TTTTAAACCC TCTTTTAGAC  
251 AGTATCACTG GATAACATC CTTTTCAATA ATAAAAATCC AAGTCATTTC  
301 TGGCCCTTTT CCTGGAAGTG CTTTCAAGTT ACAGGAACAC CAATAAGAGG  
351 CCCTTTTCTG GGCATGGAGC CCAGGTCTCA AAGGGAGGCT CTAGAAAACA  
401 TCTGGTCTGC TTGATATATA GAAACTAGCA CTGCATGTGT GTGTTTCTGT  
451 GCATGTGTTT CTCCTGTGCT GACTCATGGC ATTGAAGCCT CTCTGGAAC  
501 ACCCCCACCC TTCTAGCCAG GCAGTTTATA CACACCCTT TGGCTCCTCC  
551 TTGATTTAAA TGTTAGATCA CGAGGAAGAA GGAAAACGAT TTCAAGAGCT  
601 GCACTTAAGC ATCTAGAAAT TTCTGCGTCA CACCTCTTGA GAGAAGAGAC  
651 TGGCTCCAGG TCTGACTCAG TCCACTACAA GCTAGACGGT CTTCTTAAAG  
701 CACCAACATT ACTTGAGTCT TTGGATAAAA TTGAGAAAAG AGTCTACAAG  
751 TATTGTGGAG TCTACAGGAG GCAGGAGGCT GACAACTGGC AGTAAAGACA  
801 AAGATGTCAG GCCTGCGGCC CGGCACTCAA GTGGACCCTG AGATTGAGCT  
851 TTTTGTAAG GTAAGTTTTT CAGTTATAAT AACTGCATGT AGAATATATT  
901 AGTTTTTGAC ACTGAAGTCC AATGTCTTTA AAAATTCTCC ACATTTGGGC  
951 TAGAGATAGG AAAGAATGTT GTGATTATTT TCCTACTCTG AGTTCTAGAA  
1001 GAATGCCCCG GTGTGTGACT GTTCTTAGAT GACAACAGGA AAACAGATCT  
1051 CTCTGAAAA AGGCAAGGTG ATATGGTGGG AAAGCACTAG ACTGTTTGT  
1101 AGTGAGCGAC TAAATTATAT TCTTAATGGC TTCCTATATA ACCTTAGAAA  
1151 AATCCCTCCT TCTCTCCAGA CTTTTTTTTT TCCATCTATA CAATGAAGGA  
1201 GCATGACAAG ATGATCCTTA AGGGCTTTCC AAGTCTCAA ATCTGTGTTT  
1251 TATGAGATAG GTTTTGGAAG GCCTGACTGG GTGGAGGAGA GGGCCGAGAA  
1301 TGACCTGAGA ACTCCATTCC CACACATAGC CTAGACAGAA CTTTCTAAAC  
1351 TTCTACAATG GACAAACATC ACAGCAGGGT CACATGGACA CTGGGAGAAA  
1401 AAAAACAGGA GTCTGTGTGC TTGTTATGTG AGGAGGGGGA CATTTTAGAA  
1451 TGCTCTGCTT CTCTCTTTTG GTCTGCCATG GAGTTGTTTT TTTTTTTTTT  
1501 TAACATGTCA ACTTTTCAGA AAAGCACTTT GGAAAACCCC TAAATCAAGA  
1551 GAAAGGAACA TGTGTTTCCA AATTAGCTCA TCAAGAAAGA AAAATTTATA  
1601 TGGGTTATTC CCAGTAGAAA TTAAACAGCT TACTAAATCC TCGCTTACAT  
1651 TAACGTGTA GCTTTTCCCT TTATTTTCAC TGACTATTGG ATAGTATTCA  
1701 GGATAATAAG AACAAATAACA AACTCATATT GTGCCTGGCT CTTTTCTAAA  
1751 TACTTTACAT ATGTTACCTA ATTTAGTCCT AACAACCTAG GAGATAGGTT  
1801 GTTATTAATG GTGCTTGAT AGTACTAGCA TCATCAGTAG TAGTAGTGAT  
1851 AGTAGTAGTT ATTACTACTT CATTACAAC TTTAGTTATT ACAATATTAT  
1901 AATGTTGTTC TCATCATTTT TAGATAGGTA AACTAAGGCA TTAAAGTTTA  
1951 AGTAACCTGC CTCTAAAAC ATACAGCTCC CTGATGGCTT ACAAAGACAT  
2001 AAAATAAGAT ATACTTACCA AATGTTAAGT TAAATACCTA TTGGCAAAAG  
2051 TAATGCTTTT ACAGCCAGTT AGATTATTTA ACAGCTTGTC ACATATATAC  
2101 ACCAAGGACA TCATCAACCT GTCTTTTCAA AATTGTAAGA GAAAGACCCT  
2151 TGAATTCCTG CAGTGCTAGG TAATGCAATT AAGTGTTTGC TAAACTATCG  
2201 GGCATAAGAG CGACTTCTTC TATCTCTGGG TTGTAGCAAA ACATATAACT  
2251 GCTCAGATAG GATATAAATG AGCTGTAATT TCCTAAGTGG CTTTTTACAT  
2301 TTACCAATTC CAAATCAGAA GTAATGTCTC TTCCTGGGT AACTAAAGTG  
2351 TTCCCTTTGT CTGAACTGTT CATTCAACTC AATTAGACTC CTGAAATCAA  
2401 TTGTTGGCTT TCACCTATGT GTTTATCTTC ATAGACTTTT CATATTTGGG  
2451 TGGTAATCTG GACAGGAAAC TTTAGCAAGT CACACATGGA TGAGAAAATG  
2501 TTGAATTTAA TAATAACTTT CAAAGGAACC AATAATTTAT TGAGTACTTA  
2551 CTATATGGTA GGCAGTGTGC TAAGTGGTTT ATTAACCCTC TTTTATGAAT  
2601 ACAGAAATTA AAGCAAAGAG CAGCTAAGTA ACTTTGTCCA AGGTCACATA  
2651 GCTAGTTAGT GGCAGAGTTA GAATTCTATT CCTTTAAAAT AGCTATGTCT  
2701 AATATTATTC AATTGTTTTT AGTTGTGTGA ACTTTTGTAGT AAAGTAGTCC  
2751 AGAATTTTAT CAGGTGGAGT GCTTTAGATG TAAGCTTATC TAATGACATT  
2801 GATACAAATT ACAGATTTTC TGGAAGAACC TCAAATATCA TCTGGTCCAG  
2851 GTTTTTGTTT TATTTTAAAG TGTGTTCCAC AGATCTCTAG AAGTTTCGTG  
2901 GAAGATACTG GGAGGGGAAA TAGGGGTGGA GAAAGACTAA AAGTGCTAAT  
2951 GAGTAATTTT TAAAAGGCAT TACTACAAGA GATTAAGCAT TCTCCTGTCA  
3001 CAATTAAGAA TTTATACTAC GATATCTATG TGTCTGTGT AGTCAATAAA  
3051 AACATTGTCT TTTAGTCTG AATGATTTGA GCAAGGTTTC TATCCAATAA  
3101 CTAAGAACAA ATTTTTCATA ACACACATTT TATTTTCTCT AAGTGTAGGG

FIGURE 3, page 1 of 24

3151 ATGAAATAAT CTTAATGATT TGTGTTTTGT TGTAAATGG AATGTTTGCA  
3201 TTCTGTACCA AAGACTCTAA AATTAAGTTT TAGTATATTT GTACATAAAA  
3251 TTATGGAATT TAACATTTGG GCCAAAATTC TGAATGTAAT ACTTTTGTCA  
3301 AAAACTTTTT TTAATGTGTG GGGGAAAGAA GGAAGAGATG ATACTCTACT  
3351 CTGAGTGTTC AGACCATTTT AAAGTATCTT ATAGCTATTA TAAATACTTA  
3401 TAAAGACTGA TTAATATAAA AATTCAACAA AACTATTAAA TGAGAGAAGG  
3451 CAGTGTTTAA GAGTATGGTG TCTGGAGGAT ATAGTCCTGG TCCTGAATTT  
3501 ACTGAGTGAG AAGAGGATGT ATGTCATCAA CTCTTGATTA GCCGACTGTA  
3551 CTTGAGCAAG TCAGCCTCTC TGAGCCTCAG TTTCCCTCACC TGTAAAACAA  
3601 GTGTAATAAC AGAGCCTACC TCATAGCATC ATCCTATTTG TAAGGATTAA  
3651 ATAAACAACG TGTATAAAGC ACAGTAGTTG GCAATGTAGT AAACACTTTA  
3701 TAAATGTTAA CTATTGTTGC CATTATTATT TTTTCATGTTT AAAAAGTTAG  
3751 ATCACAACAA CAAAGAAAAA AATTGTTTTG GTGAATGGCT GCATCCTGTC  
3801 TTTGCCAGCT GAAGATAATT AAGAGATCAG TAATTTCATCA ATCAGGCTAG  
3851 CGAATTTATA TCCTAAAATT GTATGTGATG GCACTTTAAA TCAGCATAAC  
3901 ATAACAGAAA AAAAACCCTT TCAGTTTCC TGTAAAACCT TACTGCATTT  
3951 CCCCCACACC TCAGTGTTTT GATTTTCCTT TTGCCAAAGG CGATCCACCC  
4001 TFCCTGCTGT ATCTATTATC AGACTCCATT CTTCTTCCTG CCTCCACCCC  
4051 TTAATCATGT TTCCACTCAC TAAACCTAGT TTTGATTGGA TCCTTAGTCT  
4101 GACTTCTATT ACAAACAACA TGCAGCTGGT AAGGTTGGGT TGCTCTTCC  
4151 CCATTCCTCT TCACACCCTG CCATCATAAA GATCAACAAT ATCATTTTCT  
4201 TTGTCACATC CACTATCAGG GAAAGAAAAA TTTGTCAAAA AATTGAAATT  
4251 TTGTCCAGTG TTTCTGGACC TTAATAATTC TACGCATAAT AGATCAGAGC  
4301 AGCCGTAAGA TGAAGTACCT TTTATTTCCCT TCTATAGGCT ACTCTCTCTA  
4351 GTCTTTCCTA TCATAATTCT TGGTGATTTT AATATCTACA CAGATGATTC  
4401 TTCCAACACT CTAGCCCTC AGATCCCTGA CTTTCCCTCC TCCAGGGATC  
4451 TTAGTCTCTA TCATCTCTCA GGTGCTTCTT CCCATAGTCA TACGCTTACC  
4501 TTTGTCAATT CAATGTCTGC AACCTCTGCA TAATATCATT TATTTGGGGG  
4551 TGTTTTTTGT TCTTCTTTT GAACTTCTCT ATTTTCATAG GTACATGTTT  
4601 AACTTTGACA AAATACTTTA AAAAGCAGTT GTACCATTTT ACACTTCACT  
4651 TCATTATGTG AGAGTTCCAC TTGCTCCACT TTCCTGTCAA CACTTGGTAT  
4701 GGTCAATCTT TTTCAATTCA GTTATTCTAA TGTGTTTATC ATGGTATCTC  
4751 ATTGTGGTTT TAATTTGCCT TTCCACATG TCTAATGATA TTGGGCATCT  
4801 TTTTCATGTC TTATTTATCA TCTGTATATC TTCCTTTGTA AAGTTTTCAA  
4851 ATCTCTTCCC CATTTTAATT GTTCTTTAAC TTTAATTTT AATTTTGTG  
4901 AGTACATAGT AGGTATATAT ATTTATGGGT TGCATGGAAT ATTTTGATAC  
4951 AGGCATGCAA CATGTAATAA TCACATCAGG TAAATGGGAT ATTCATCCCC  
5001 TCAAGCATTT ATCTTTTGGG TTACAAACAA TTCAATTATA CTGTTTGTAGT  
5051 TATTTTTTAA TGTACAATTA AATTATTTTT CACTGCAGTC ACCTTATTGT  
5101 GCTAGCAAAT ACTAGGTGTT ATTCATCCTT CCTAGCTATT TTTTGTACCC  
5151 ATTAACACTC TTCACCTCCC CACACACACA GACTCACTAC CCTTCCCAGC  
5201 CTCTAGTAGC CATCCTTTAC TCTCTCTATG AGTTCAAATG TTTTGTCTCT  
5251 TAGCTCTCAC AAATAAGTGA GAACACGTGA AGTTTGACTT CTGTGCCTGG  
5301 CTTATTTTAT GTAATATATG ACGTCCAGTT CCATCCATGT TGTGCAAAT  
5351 GACTGAATCT CATTCTTTTT TATGGTTGAA TAGTACTCTG CTGTGTATAT  
5401 GCCCACATTT TCTGTATCCA TTCATCTGTT GATGGGATAT TTAGGTTGCT  
5451 TCCAAATCTT GGCTATTGTG AATAGTACTG CAATGAATGT GGGAGTGCNN  
5501 NNNNNNNNNN NNNNNNNNNN NNNNNNNNGCT GAGATGATAT CTCATTGTAG  
5551 TTTTGATTTG AATTTCTCTG ATGATCAATG ACATTGAGCA CCTTTTCATA  
5601 TGGCTCTTCA CCATTTGTAT ATCTTCTTTT GAGGAATGTC TATTCACATC  
5651 TTTTGCCCAT TTGTCAAACA CAGTATTAGA TTTTTTCCTA TAGAGTTATT  
5701 TGAGCTCCTT ATATATTCTG GTTATTAATC CCTTGTCAGA TAGGTGGTTT  
5751 GCAAATACTT TCTCCCATTC TGTGGGTCGT CTTTGACATC TGTGATTCC  
5801 TTTGCTGTGC AGAAGCTTGT TAACTTGATG TGATCCCATC CGTCCATTTT  
5851 TGCTTTGCTT GCCTGTATTT ATGGCATATT ATTCAAGAAA TCTCTGCCCA  
5901 CTCCAATGTC TTGGAGAGTT TCCCTAATGT TTTCTTTTAG TAGTTTCATA  
5951 GTTTCAGGTC TTAGATTAA GCCTTAAATC CATTTGTATT TGATTTTTTG  
6001 TATATGGTGA GAGATAGGGG TCTAGTTTCA TTCTTTTGCA TATGGATATC  
6051 CAGTTTTCCC AGCACCTTTC CCCAGTGTAT GATCTTGCA CCTTCCCTGA  
6101 AAATGAGTTT ATTGTAATG TATAGACTTA TCTCCAGGTT CTCTATTCTT  
6151 TTCCACTGAT CTATGTGTCT TTTTTTATGC CAGGACCATG CCATTTTGGT  
6201 TACTATAGCT CTGTAGTATA ATTTGAAGTC AGGTATTGCT TAGGAGATAG  
6251 CTTTGGCTAT TCTGGGTCTT TCCTGGTTCC ATATAAATAT TAGGATTTTT

FIGURE 3, page 2 of 24









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15751 NNNNNNNNNN NNNNNNNNNN NNNNNNNNNN NNNNNNNNTAT AAGGTGAGAG
15801 ATGAGGATCC AGTTTCATTC TTCTACATGT GGCTTGCCAA TTATCCCGAC
15851 ATTATTTGTT GAATAGGGTG TCCTTTCCCC ACTTTATGTT TTTGTTTGCT
15901 TTGTTGAAGA TCAGTTGGCT ATAAGTATTT GGCTATATTT CTGGGTTCTG
15951 TATTCAGTTC CATTGGTCTA TGTGTCCATT TTTATACCAG TACCATGCTG
16001 TTTTGGTGAC TATAGCCTTA TAGTCTAGTT TGAAGTCGGG TAATCAGATG
16051 CCTCCAGATT TGTTCCTTTT GCTTAGTCTT TCTTTTGCTA TGTGGGCTTT
16101 TTTGGTTTCA TATGAATTTT AGAATTTGTT TTCTAGTTCC GTGAAGAATG
16151 ACAGTGGTAT TTTTCATGGG ATTGCATTGA ATTTGTAGAT TGCTTTTGGC
16201 AGTATGGTCA TTTTCACAAT ATTGATTCTA CCCATCCATG AGCATGGGAT
16251 GTATTTCCAT TTGTTTGTGT CATCTATGAT TTCTTTCAGC AGTGTTTTGT
16301 AGTTTCTTTT GTAGAGGTCT TTCACCTCCA TGGTTAGGTA TATTCCTGAG
16351 TTGTTCAATT TATTTTATTT TTTGCAACTA TGGTAAAAGG GATTGAGTTC
16401 TTATTTTATT CTCAGCTTGG TCACTATTGG TATATAGGAG AGCTACTGTT
16451 TTGTGTACAT TAATTTTGTA TCCTGAAACT TTGCTGAATT TATTTACCAG
16501 TTCTAGGAGC AGTCTTTAGA GTTTTCTAGG TATACAAACA
16551 TATCATCAGC AAACAGGAAC AGTTTGACTT CCTCTTTACC AATTTGGATG
16601 CCCTTGATTT TTTTCTCTTT TCTGATTGCT CTGGCTGGGA CTTCCAGTAC
16651 TATCTTGAAT ATAAGTGGTA AAAGTGAGCA TCATTGTCTT GTTCCAGTTC
16701 TCAGGGGGAA TGCTTTCATC TTTTCCCTGT TCAGTATAAC GTTGGCTATG
16751 GGTTTCGTCT AGATGGCCTT TATTACCTTA AGGTATGTTT CTTCTCTGCC
16801 AATTTTGTCT AAGGTTTTAA TCATAAAGAG ATGCTGGATT TTGTCGAATG
16851 CTTTTTATGT ATCTATTGAG ATGATCATGT GATTTTTGTT TTTAATTATT
16901 TCTATGTGGT GTATGACATT TGTAACTTG CAGATGTTAA ACCATCCCTG
16951 CATCCCTGGT ATGAACTCA CTTGATCATG GTGGATTATC TTTTGTATAT
17001 GCTGTTGGAT TTAATTAGCT AGCATTTTGT TAAAGATTTT TGCATATATG
17051 TTCATCATGA ATATTGGTCT GTAGTTTCTT TTTTTTATGT CCTTCCTTGG
17101 TTTTGGTATT AGGGGGATAC TGGCTCCTG GAATGATTTA GAGATAAATT
17151 CCTTTTATC CAATGGAATA GTGTCAATAG GATTGGTACC AATTCTTCTT
17201 TGAATTGCCAG ATAGAATGCA GCTGTAAATC TGTCTGGTCC TGGACTTTTG
17251 TTGTTGTTGT TGGCAATTTT TAAATTATCA TTTTAATCTT GCTGCTTGT
17301 ATTGGTGTGT TCAGAGTTAC TATAACTTCC TGGTTAATC TAGAAGATCT
17351 TTGTATTTCC AGGAATTTAT CCTCTCTCT AGGCTTTCTA GTTTATGCAT
17401 GTAAAGATGT TCACAGAAGC CTTAAATAAT TTTTTGTAT TTCTGTCGTA
17451 TCAGTAGTAA TGTCTTCAT TTCAATTCTA ATTGAGTTTA TTTGGATCTT
17501 CTCTCTTCTT GGTTAATCTC ACTAAGTCTC TATCAATTTT ATTTATCTTT
17551 TCCAATAACA AGCTTTTGT TCACTTATCT TTTGTGTCTT GTTTGTTTGT
17601 TTCAATTTCA CTTAGTTCTG CTCTGATCTT TATTTCTTTT CTTCTGCTGG
17651 GTTTGGGTTT GGATTGCTTT TGTTCCTTCA GTTCTGTGAG GTGTGACCTC
17701 AGATTGTGTA TTTGTGCTCT TTCAGACTTT TTGATGTAGG CATTTAATAC
17751 TATGAGCTTT CCTTTTAGCA CCACTCTGAT GGTTAATACT GAGTGTCAAC
17801 TTGATTGGAT TGAAGGATGC AAAGTATTGA TCCTGGGTGT GTCTGTGAGG
17851 GTGTTCCCAA AGGAGATTAA CATTGAGTC AGTGGGCTGG GAAAGGCACA
17901 CCCACCCTTA ATCTGATTGG GCAGCATCTT ATTAGCTGCC AGCATGGCTA
17951 GAATATAAAG TAGGCAGAAA AATATAAAAA GATGAGACTG ACTTAGCCTC
18001 CCAGCCTACA TCTTCTCTC GTGCTGGATA CTTCCTACCC TCAAACATTG
18051 GACTCCATGT TCTTCAGTTT TGGGACTTGG CCTGGTTCTC CTTGCTCCTC
18101 AGCTTACAGA CAGCCTATTG TGGGACCTTG TGATCATGTT AGTTAATACT
18151 TAATAAACTA ATAGGATATA TATAATATAT ATCCTGTTAG TTCTGTCCCT
18201 CTAGAGAACC CTGACAAATA CAGCCACTTT TGCTGTATCC CAGAGGTTTT
18251 GATAAGTTGT GTCACTGTTA TCGTTCAGTT CAAACAATTT TTGATTTCCA
18301 TCTTCATTTT ATTTTGACCC AACAAATCATT CAGGAGGTTA TTTAATTTTC
18351 AGGTATTTGT GTGGTTTGA GGATTCCTTA TGGAGTTTAT TTCTAATTTT
18401 ATTCCACTGT GTTCTGAGAG AATACTTGAT ATAATTTTGA TTTTCTTAAA
18451 TTTACTGAGA CTTGTTTGT GCCTTATCAT GTGGTCTATC TTGGAGAATG
18501 TTCCATGTGT TGATAAATAG AATGTATATT CTGCAGTGT TGGGAAGAA
18551 GTTCTGTAAA TATCTGTAA GTCCATTTGT TTTAGGTAT AGTTTAAGTT
18601 GATGGTTTAT TTGTTGACTT TCTTTTGA TGACCTGTCT AGTGCTGTCA
18651 GTAGAGTCTT AAAGTCCCCC ACTATTATTG TGTTACCATC TATCTCATTT
18701 CTTAGGTCTA GTAGTAATTG TTCTATAAAT TCAGGAGCTC TGGTGTTAGG
18751 TGCATATATA TTTAGGATTG TGATATTTTC CTGTTGGACT AGTCCTTTTA
18801 TCATTCTTTT ATGCTCTCTG TTGTCTTTT TAACTGCTAT TGCTTTAAAG
18851 TTTGTTTGT CTGATATAAG AATAGCTACT TCTGCTCACT TTTGGTGTCC

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25201 TGCCATGTGA GATGTGCCTT TCACCTTCTT CCATGATTGT GAGGCCCTTCC  
25251 CAGCCACGTG GAACGTGTGAG TCCATTAAAC CTCTTTTTAT TTTTATTTTT  
25301 TTTGTAAATT GCTCAGTCTC ATGTATGTCT TTATCAGCAG CATGGAAACA  
25351 GACTAATACA AATATTTATC AGTGATATTG GCCTATAGTT TTCTTTTTTG  
25401 ATGTGTCTTT GGTTTTGGTA TCAIGGTAAT ACTGGCCTTG TAGAATGATA  
25451 TTAGAAGTAT TTTCTCCACC TATAATTTTC AGAATAGTTT GAGTAGAATT  
25501 GGTGTGAGTT ATTTTATTTT TTTTATTTTT GAGACAGGGG CTCACCTCATG  
25551 TTGCCCAGGC TGGAGTGCAG TGGCACAATC TTAGCTCCCT TCAACCTTGA  
25601 CTTCCCAAGC TCAGGTGATC CTCTACCTC AGTCTCCTGA GTAGCTGGGA  
25651 CTACAGGCAC GTGCCACCAT GCCTGGATAA TTGTTTATAT TTTTAGTAGA  
25701 GACAGAGGGT TTTTTTACT TGTATCTTAT TGTACTGTCT ATGTCTCAAA  
25751 ACATTGTTGT AGTTATTATT TTTGATTGGT TCATCATTTA GTCTTTCTAC  
25801 PTAAGAGTAG TTTACAAACC ACAGTTACAG TATTATAATA TTCTGTGTTT  
25851 TTCTGTGAGT TTTATGCCTT CTGGTGATTA CTTATTTGTC ATTAACCTTA  
25901 TTTTCTTTCT GATTGAAGTA CTCCCTTTAG CATTTCTTGT AGGGTATATC  
25951 TGGTGTGAT AAAAAGCCCT CAGCTTTCAT TTGTCTGGGA AGATTTTAT  
26001 TTCTCCATGT TTGAAGGATG TTTTGCTGG ATATACTATT CTAGGGTAAA  
26051 AGTGTTTTTT TTTCAACACC TTCCTGTGT CATGCCACTC TCTCCTGACC  
26101 TGTAAGATTG CCACTGAAAA GTCTGCTTCC AGACGCACTG AAGTGCCATT  
26151 GTATGTTATT AGTTTCTTTT CTCTGTCTGC TTTAAGATCC TTTCTTTATC  
26201 CTTGACCTTT GAGAGTTGGA CGTTAAATGC CCTGAGATAG TCTTTTTTGG  
26251 GTTAAATCTA TCTGGTGTC TATGACATTC TCGTACTTGC ATATCAATGT  
26301 CTTTCTCTAG GTTTTGAAG TTCTCTGTTG ATATCCCTTG AATAAACTTT  
26351 CTATCCTATC TCTTCTCTA CCTCCTCTTT AAGGCCAATA ACTCTTAGAT  
26401 TTGCCCTTTT GAAGCTATTT TGTAGATTTT ATAGGCATGC TTTATTCTTT  
26451 TTTATGATTT TTTTCTTTT TCTCCTCTGT GTGTTTTAAA ATAGCCTGCC  
26501 TTCAAGCTCA TTAATTCCTT CTTCTGCTTG ATCAATTCTA CTATTAAGG  
26551 ACTTTGATGC ATTTTTCGGT ATGTCAGTTA CATTTTCAA CTCCAGAATT  
26601 TCCACTGAT TTTTAAAGT TATTTCATC TCTTTGTTAG GTTTACCTGA  
26651 TAGAATTCTC TGTGTTATCT CAATTTTTTT TTAGTTTCCT CAAAACAGTT  
26701 ATTTTGAATC TTTGTCTGAA ATGTCACGTA TCTCTGTTGC TCCAGGATTG  
26751 GTCCCTAGTG CTTATTTAG TTCATTTGGT GAGGTCATGT TTTCTGGAT  
26801 GGTCTTGATT CTTATGGATG TTTATCTACA TCTGGGCATT AAAGAGTTAG  
26851 GTATTTATTG TAATCTTCAC AGTCTGGGCC TGTTTGTACC CATCGTCTT  
26901 GGAAGGCTT TAATTTGGCT TTCCTGCTCC ACCTCTCCTC TCTTTTGCCC  
26951 AATTTATTTT AAGACAGAGT CTCACCTGTG TGCCCATGCT GGAGTAGAGT  
27001 GGCATGATCT TGGCTCACTG CAACCTCTGC CTCCAGGGTT CAAGCAATTC  
27051 TCCTGCCTCA GCCTGCCAAG TAGCTGGGAT TACAGGAGCC CACCACCATG  
27101 CCCAGCTAAT TTTTAGTAGA GATGGGGTTT CATCATGTTG CTCAGGCTGG  
27151 TCTCGAACCC CTGACCTCAA GTGATCTGCC TGCCCTCAGCC TCCCAAAGTG  
27201 CTAGGATTAC AGGCATGAGC CACCACACTT GGCGTCTCTT GCCCATTTTT  
27251 AAAGTTGGGT AGTTAGTTGT TGAGTTGTGT TCTTTATTTG TATTTTTATA  
27301 TGTATAGAT ACAGGACTTT TTTATTTTCT TAATAATTCT TTTGAAAAGC  
27351 AGGACATTTT ATTTTGTCTC TATCCCAGCT TATTGAATTT TTCTCTTCTC  
27401 TCCCTCCTCT GAATTCAGT CACATTGACC TTCTTTCAGT TCTTTATACA  
27451 TGCCATGCTC AAGCCTATTG CAAGACCTTT GCACATGTTA TTCCCTGTTT  
27501 AGAATGCCCT CTTCGTGCCC ATTCATCTAA TTAAGTGTTA CTTATCCTTT  
27551 GAACTTAGTT TAAATGCTAC TTCCTCAGGG AAGGCCTTCC CTGACAGACC  
27601 CCATATAGAT TTCTCAGAGT TTCTCTGTTA TACACTCATA AAATGCACTT  
27651 CCTTCTTCA AATAATTTAT CTCTGTTTAA AACTGAGAGT TAATTTGGGG  
27701 GAATATTTTT ATTTTAATAT CTGGTGTGTA TATATATATG TATATGCTG  
27751 GTATATGTTA CACACATAAT TTGTTCAAGT AATATTCATT GGGTAAGTAA  
27801 ATGAGTAAGT GAAGAAAGAG GGTCCACCAA TAAACTCAAG TGCATATAAA  
27851 ATTTCAAAGC AGAAAAAGTG TTTTCCATCA GTAGAAAAAA TGATGGCTGA  
27901 TATAGTTTAG ATATTCTCC TTGCCCAAAT CTCATGTTAA ATTTTAATTC  
27951 CCAATTCTGG AAGTGGGCA TGGTGGAAAG TGTTTGATC ATGAGGGCAA  
28001 ACCTCTCATG GCTTAGTGCT GCCCTCATGA TAGTGAGTGA GTTCTCATGA  
28051 GATCTGGTTG TTGTAAAGTG TGGCATCTCA TCCCCACTC TCTCTCTCTC  
28101 TCTCTCACTC CTGCTTTTGC CATGTGAAGT GTCTGCTCCC AGTTCAATTT  
28151 CTGCTATGAG TAAAATTTCC CTGAGGCCTC CCCAGAAGCT GAGCAGATGC  
28201 TGGTGCCATG TTTGTACAGC CAGCAGAAGT GTGAGCCAAT TAAACCTCTT  
28251 TTCTTATAAA TTATCCATGC TCAAGTATTT CTTAGAGTA ATGCAAGAGT  
28301 GACCTAATAC AATGATGTAT CAGGCTGTGT TTGCAATACT ATAAAAAAA

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28351	TCTGAGCCTG	GGTAAATTAT	AAAGAAAAAA	AGTTTAATTG	ACTCATAGTT
28401	CTGCAGATAT	TACAAGAAGC	ATGGTGCTGG	CATCTGATTG	TGGTGAGGGC
28451	CTTAGGAAGC	TTACAATCAT	GGTGGAAGT	GAAGAGGGAG	CAGGTGTCTC
28501	CATGCTGAAA	GTGGGAACAA	GAGAGCAAGG	GGGGAGGTGC	CACATACTTT
28551	TAACAACCAG	ATCTCGAGGG	AACTAACTGA	GCAGGAACAA	ACTTATTAAAC
28601	AAGATGATGG	TGCTAAACCA	TTAATGAGGG	ATCCGCCCCC	AGGATCCAAT
28651	CACCTCCTAC	CAGGCCCCAC	CTCCAACATT	GGAGATTACA	TTTCAACATG
28701	AGATTGGGAG	GGGACAAATA	TCCAAACCAT	ATCAGATGGA	TTTATTTAAT
28751	GAAAGGCATA	AGACTATTAA	CTATTGTAA	AAATTTAAAA	ATACTAAAGA
28801	AGTCCTCATA	CACTTCTTAC	ACCAAAACAA	AATCCAAATA	AATGAAACAA
28851	ATGCAAAAAT	TAAACCATGA	TGGTACTAGA	AGAAAACGTG	ATAGAAAATC
28901	CTTATGGTAA	ATCAAAATAT	AAAAATAAAG	TAAGGAAATA	TGTTTTTTGT
28951	AATCTTGATG	TATATAAGCA	GATCAGAAAA	GCCAGACCAC	GTAGAGAAAA
29001	AGCATGGTAG	ATCTCATGTA	AATTTAAATT	TTACATAATC	CATGTTTTTA
29051	AAATTACATG	TAACATATAT	CACAAAGAGT	TAATGTCTTT	AAAATACAAA
29101	TAATTTTTCC	AAACAATAAG	AAAAAGTCAT	TACCTTCATA	AAAAAATTAA
29151	AAACTGTCAT	AAACAAACAA	TTCACAAAAT	AAGGAAATGG	CCAATGGCCA
29201	TATGGAAAGG	CACCTTTCAG	AAAGGAAATT	TGGTGGAGGG	AGGAGCCAAG
29251	ATGGCCGAAT	AGGAACAGCT	CCGGTCTACA	GCTCCAGGA	TGAGCGACGC
29301	AGAAGACGGG	TGATTTCTGC	ATTTCCATCT	GAGGTACCGG	GTTCATCTCA
29351	CTAGGGAGTG	CCAGACAGTG	GGCGCAGGTC	AGTGGGTGCG	TGCACCGTGC
29401	GCGAGCCGAA	CAGGGCGAG	GCATTGCCTC	ACTTGGGAAG	AGCAAGGGGT
29451	CAGGGAGTTC	CCTTCTGAG	TCAAAGAAAG	GGGTGACAGA	TGGCACCTGG
29501	AAAATCGGAT	CACTCCCACC	CAAATACTGC	GCTNNNNNNN	NNNNNNNNNN
29551	NNNNNNNNNN	NNNNNNNNNN	NNNNNNNNNN	NNNNNNNNNN	NNNNNNNNNN
29601	NNNNNNNNNN	NNNNNNNNNN	NNNNNNNNNN	NNNNNNNNNN	NNNNNNNNNN
29651	NNNNNNNNNN	NNNNNNNNNN	NNNNNNNNNN	NNNNNNNNNN	NNNNNNNNNN
29701	NNNNNNNNNN	NNNNNNNNNN	NNNNNNNNNN	NNNNNNNNNN	NNNNNNNNNN
29751	NNNNNNNNNN	NNNNNNNNNN	NNNNNNNNNN	NNNNNNNNNN	NNNNNNNNNN
29801	NNNNNNNNNN	NNNNNNNNNN	NNNNNNNNNN	NNNNNNNNNN	NNNNNNNNNN
29851	NNNNNNNNNN	NNNNNNNNNN	NNNNNNNNNN	NNNNNNNNNN	NNNNNNNNNN
29901	NNNNNNNNNN	NNNNNNNNNN	NNNNNNNNNN	NNNNNNNNNN	NNNNNNNNNN
29951	NNNNNNNNNN	NNNNNNNNNN	NNNNNNNNNN	NNNNNNNNNN	NNNNNNNNNN
30001	NNNNNNNNNN	NNNNNNNNNN	NNNNNNNNNN	NNNNNNNNNN	NNNNNNNNNN
30051	NNNNNNNNNN	NNNNNNNNNN	NNNNNNNNNN	NNNNNNNNNN	NNNNNNNNNN
30101	NNNNNNNNNN	NNNNNNNNNN	NNNNNNNNNN	NNNNNNNNNN	NNNNNNNNNN
30151	NNNNNNNNNN	NNNNNNNNNN	NNNNNNNNNN	NNNNNNNNNN	NNNNNNNNNN
30201	NNNNNNNNNN	NNNNNNNNNN	NNNNNNNNNN	NNNNNNNNNN	NNNNNNNNNN
30251	NNNNNNNNNN	NNNNNNNNNN	NNNNNNNNNN	NNNNNNNNNN	NNNNNNNNNN
30301	NNNNNNNNNN	NNNNNNNNNN	NNNNNNNNNN	NNNNNNNNNN	NNNNNNNNNN
30351	NNNNNNNNNN	NNNNNNNNNN	NNNNNNNNNN	NNNNNNNNNN	NNNNNNNNNN
30401	NNNNNNNNNN	NNNNNNNNNN	NNNNNNNNNN	NNNNNNNNNN	NNNNNNNNNN
30451	NNNNNNNNNN	NNNNNNNNNN	NNNNNNNNNN	NNNNNNNNNN	NNNNNNNNNN
30501	NNNNNNNNNN	NNNNNNNNNN	NNNNNNNNNN	NNNNNNNNNN	NNNNNNNNNN
30551	NNNNNNNNNN	NNNNNNNNNN	NNNNNNNNNN	NNNNNNNNNN	NNNNNNNNNN
30601	NNNNNNNNNN	NNNNNNNNNN	NNNNNNNNNN	NNNNNNNNNN	NNNNNNNNNN
30651	NNNNNNNNNN	NNNNNNNNNN	NNNNNNNNNN	NNNNNNNNNN	NNNNNNNNNN
30701	NNNNNNNNNN	NNNNNNNNNN	NNNNNNNNNN	NNNNNNNNNN	NNNNNNNNNN
30751	NNNNNNNNNN	NNNNNNNNNN	NNNNNNNNNN	NNNNNNNNNN	NNNNNNNNNN
30801	NNNNNNNNNN	NNNNNNNNNN	NNNNNNNNNN	NNNNNNNNNN	NNNNNNNNNN
30851	NNNNNNNNNN	NNNNNNNNNN	NNNNNNNNNN	NNNNNNNNNN	NNNNNNNNNN
30901	NNNNNNNNNN	NNNNNNNNNN	NNNNNNNNNN	NNNNNNNNNN	NNNNNNNNNN
30951	NNNNNNNNNN	NNNNNNNNNN	NNNNNNNNNN	NNNNNNNNNN	NNNNNNNNNN
31001	NNNNNNNNNN	NNNNNNNNNN	NNNNNNNNNN	NNNNNNNNNN	NNNNNNNNNN
31051	NNNNNNNNNN	NNNNNNNNNN	NNNNNNNNNN	NNNNNNNNNN	NNNNNNNNNN
31101	NNNNNNNNNN	NNNNNNNNNN	NNNNNNNNNN	NNNNNNNNNN	NNNNNNNNNN
31151	NNNNNNNNNN	NNNNNNNNNN	NNNNNNNNNN	NNNNNNNNNN	NNNNNNNNNN
31201	NNNNNNNNNN	NNNNNNNNNN	NNNNNNNNNN	NNNNNNNNNN	NNNNNNNNNN
31251	NNNNNNNNNN	NNNNNNNNNN	NNNNNNNNNN	NNNNNNNNNN	NNNNNNNNNN
31301	NNNNNNNNNN	NNNNNNNNNN	NNNNNNNNNN	NNNNNNNNNN	NNNNNNNNNN
31351	NNNNNNNNNN	NNNNNNNNNN	NNNNNNNNNN	NNNNNNNNNN	NNNNNNNNNN
31401	NNNNNNNNNN	NNNNNNNNNN	NNNNNNNNNN	NNNNNNNNNN	NNNNNNNNNN
31451	NNNNNNNNNN	NNNNNNNNNN	NNNNNNNNNN	NNNNNNNNNN	NNNNNNNNNN

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[illegible]

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34651 NNNNNNNNNN NNNNNNNNNN NNNNNNNNNN NNNNNNNNNN NNNNNNNNNN
34701 NNNNNNNNNN NNNNNNNNNN NNNNNNNNNN NNNNNNNNNN NNNNNNNNNN
34751 NNNNNNNNNN NNNNNNNNNN TCTGGGGACT GTTGTGGGGT GGGGGGAGGG
34801 GGGAGGGATA ACATCAGGAG ATATACCTAA TGCTAGATGA CGAGTTAGTG
34851 GGTGCAGCGC ACCAGCATGG CACATGTATA CATATGTAAC TAACCTGCAC
34901 AATGTGCACA TGTACCCTAA AACTTAAAGT ATAATAATAA AAAAAAAGA
34951 AAGGAAATTT GGTAAGATCT ATCAAAATGG GAAATGTGCA TACATTTTAC
35001 TGACCATTTT CATTTTAAAG ATTAACCTTA AAGATATAAT CTCAGAAGTG
35051 GAAGAAGCTA TATGCCCGA AATGTTTGT TCTGAAGTGC TTAGAGTAGT
35101 AATAATTTTG GAATATCTTA AATGTCTATC AATAGGAAAA TTATATAAAT
35151 TCTGATAATA TATAAAATTT ATTATTATTA TTATGTACCC ATCACAGTTG
35201 TAACTTTACA TATAATGAGA TTATTGCTT CCCTATATCT CTCTGTCCAT
35251 AGATGATGGA GTACATGAGA TTAAGAATGT CCATGTTTGT CTCTAGCAAC
35301 TGGCTCATTT CCTATTAGGA ACTAAATACA TACTTATTGA ACAAACAAAT
35351 GAACTGAGGT ACTCTCTTTT CTTAATAGGC TGGAAGTGAT GGAGAGAGTA
35401 TTGGAACTG TCCCTTTTGC CAACGCCCTT TCATGATCCT CTGGCTTAAA
35451 GGAGTTAAAT TTAATGTGAC AACTGTTGAC ATGACCAGGT AAGAGAAATC
35501 AGGACATGTT AAATTCTAGG AATTGAGATT GGTAGATACC AATAAAATAT
35551 TGGTGTTTAT TTAATGTGTA CTTTATCTAG AGACCTAACT CTGCTTATTT
35601 TTAATAATCA TAGAAAGCCT GAAGAACTAA AGGACTTAGC CCCAGGTACC
35651 AATCCTCCGT TCCTGGTGTA TAACAAGGAG TTGAAAACAG ACTTCATTAA
35701 AATTGAGGAG TTTTTAGAAC AAACCCTGGC TCCTCCAAGG TACAGCATTT
35751 ACAAGATACT ATTTTGGCTG AGATAATCTA TTTTACTGGC TTGTTTATTG
35801 CAGATTTAGT ATTCTTACCA ATTTAAGTAC TTTTGGATTT CTGGGCCTAC
35851 ATGTCAAATG ACACACATGC ATAAACATAC CCCTCCAAC TCAAATACAA
35901 AAAGATGATA TGTGTAATAT TTCAAATAAT TTTTAAAAGC TGCATAACAT
35951 ACATAACACA AGAAGGTAAG TTCTCTGTGC TCTAGAAATA GAGTAGGAAC
36001 ATATAGTGAG ATGGGAGTGA GGGAAATGGGA TACTAACACT ATGTAATTCA
36051 TAAGGATTGG TCATGACTGG TCCTTAACAC CACTGACGAA ATGACAGAAC
36101 ATACCCAACA CGAGGGCTAG TGGCCAGGAC ATAGACTCAA GCAGTTAACC
36151 AGAGGCCAGA ACTGTACTGC CACACTGAAT GACAACCGCA CATCTCTGTC
36201 TACCCAGGAT AGGTCTAGAA ACAAGAAGCA TGCTGTATTA ATTTTCTATT
36251 GCTGTGTAAC AAATTACCAC AAACCTAGTA TCTTAAAACA ACAGCTATTT
36301 ATTATCTCAC AGCTTCCATT GGTCAAGTTG CTGGGCATAG CCTGCTAAGG
36351 TCCTCTGCTG AGGGTATCAA AAAGTGGCAT TCAAGGTGTT GGTGCGGAAC
36401 ACAGTTATCA TATGGGGCCC AGGTGACTCT TCCATCTTCA TTCAAGTTTT
36451 TGGCAGAATT CAGTTCCTTG CAGCTATATG ACTGAGGTCT TAGGTTATTG
36501 GGTAGCTGTT TGTGTTGGGTT GGGTTGGCAT TCAATTACTA GAGGCTGCCC
36551 CTCTGTATAG GCATTTGCGA ACATGGCTGA TTGTTCTCTT CCTCTAAAAC
36601 CTGAGGAGA ATGTCTCTCT GATGGTTCAC CTTCTTTTTT TTTTTTTTTT
36651 TTTTTTTTTT GAGACCGGAG TCTCGCTCTG TCCCCAGGC TGGAGGGCAG
36701 TGGCACATGT TGGCTCACTG CAAGCTCCCC CTTTCGGGTC TCGGGTTCAC
36751 GCCATTCTCC TGCCCTCAAC TCCCGAGTAG CTGGGACTAC AGATGCCCGC
36801 CACCACGCCC GGGTAATTTT TTTTTTTTTT TTTTGAATT TTAATAAAAA
36851 TGAGGGTTCA CCCGGTTAAC CAGGATGGGC TCAATCTCCT GACCTTGTGA
36901 TCCACCGGCC TCGGCCTCCC AAAGGGCTGG GATTACAGGC GTGAGCCACT
36951 GCGCCCGGCC TGATGGGTCC CTTTCTTTTA AATTTTTTTA TCAGCACAAA
37001 TTATGGGATA CCTATGAAAT TCTATTATGT GTTTGTAATG CATAGTGATA
37051 NAGTCAAGGT ATCTACGGTG TCCATAACCC AAATACAATA CATTTTGTGA
37101 ACTATAGTCA CCTGCTCTT CTATCAAACA TTGAATTTAT TCCTTCTATC
37151 TTATTTATGT GTGTACTTTT TAACACACTT CTCTTCATCT TCCCTTCTCC
37201 TCCAATCAC CCTCCCCAGT CTCTGTTATC TCTCTTTCCA TTCTCTATCT
37251 TCATGTGATC AACTTTTTTA ACTCCACAT ATAAGTGAGA ACATGCTATT
37301 TTTGTCTTTT TGTGCCTGGC TTATTTCAC TACATAACA ACTCCAGTTC
37351 CATCCATGTT GTTCCAAATG ACAGATTTC ATTCTCTTT ATGGCTGAAT
37401 ACTATTTTCA TGTGTATGTA TACCACACT TCTTTATCCA TTTATCTGTT
37451 GATGGACACT TAGATCGATT CCATACCTTG TCTATTGTGA ATAATGCAAT
37501 AATAAACATG AGAGTGCAGG TATCCCTTTG ACATACTGAT TTCTCGTGCT
37551 TTGGATAAAT GCCAATTAGT GAGATTTTTG GATCTTATGG TAGTGCTACT
37601 TTTGGTTTTT TCAGAAATTC TCCATGCGTT TTCCATAGTG GCTATATTTA
37651 TACTGNNNNN NNNNNNNNNN NNNNNNNNNN NNNNNNNNNN NNNNNNNNNN
37701 NNNNNATTTT TTTTCTGTG CAGAAGCTTT TTAGTTTACT TGAGTCTAT
37751 TTGTCATTTT TTGTTCTAT TGCCTGTGCT TTTGACATCT CAATCATAAA

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37801 TTATTTGTCT AGAACAATGT CCAGAAGAAT TTTCCCTAGG TTTTCTCTTA  
37851 TTATTTTTAT AGTTTTGAGT ATTATGTTTA AGTCTTCAGT CCTTTTGAGT  
37901 TGATTTTTGT ATACAGTGAG AGATAAGGAT CAAGTTTCAT TCTTCTGCAT  
37951 ATGGCTGTCC AATTTTCCCA GTACCATTAA TTGAAAAAGG TGTCTTTTCC  
38001 CCAATGTTCT TGTGAAC TTT GTCAAAGATC AGCTGGCAGT AAATATGTGA  
38051 ATTTATTTCT AGGTTCCTA TTCTGACCAT TGCTCTGTGT GTCTATTTTT  
38101 ATACCATAAC ATGCTATTTT GGTACTATA GCCTTGTAAT ATATTTCAAA  
38151 GTCAGGTAAT GTGATGCCTC TAGCTTTGTT CTTTTTGCTC AGAATTGCTT  
38201 TGGCTATATG GAATCTTTTT TGGTTACATG TGAATTTTAG TATTCTTTTT  
38251 TTGTAATTCT GTGAAAAATG ACATTGGTAT TTTGACAGGG ATTGCATTGA  
38301 ATCTGTAGGT TACTTTGGGA AAATCACAAT TTTAATAATA TTCATTCTTC  
38351 TGATCCATGA GCATGAGATG TTTTCCATA TATTTTATC ATTTTCAATT  
38401 CCTTTCATTA GCATTTTGTG GTTTTCATTG TAAAGATCTT CCACCTCCTT  
38451 GATTAATAAT ATTCCTAGAT ATTTTAATTT TTAGCTATTG TAAATGGAAT  
38501 TGCCATCTTC ATTTCTTTTG TGGGTAGATC ATTATTGGTG TATAGAAATG  
38551 CTACATATTT TTTAGTGTG ATGTTTAA CCTGGAACCT TACTGAATTT  
38601 ACTTATCAAA TCTAAGAATT TTTTGGTGGA GTTTTLAGST TTTACTAGAT  
38651 ACAAGATCAT GGCACCAGTA AAAAGGGACA ATTTTACTTC CTTTTTCCCA  
38701 ATTTGGATGC CTTTTATTTC TTTCTCTTGC CTGATTGCCA TACCTAGGAC  
38751 TTCCAATACT ATGTTGAATA GGAGTGGTGA AAGTGGGCAT TCTTGTTTTT  
38801 TTCCATTTCT TGGAGGAAAG GCTTCAATT TTTCCCTATT CAGCATGATA  
38851 TCAGCTGTGG GTTTTGTCTA TATAGCCTTT ATTATTTTGA CATATTTTCC  
38901 TTCTATGCCC CATTGTGTTGA GAGGTTTAT CATGAAGGGG TGTGAATTT  
38951 TATCAAATGC TTTTCTGTGA TCTATTGAGA TGATGATATG TTTTGTGCC  
39001 TTTATTCTAT GGATGTCATA TATTGAGGTT ATTGATTGTC ACATGTTGAA  
39051 CCATTCTTGT ATCACTGGTA TAAATCCAC TTGATCATGG TGTATTATCT  
39101 TTCTGATATG CTATTGGATT CAGTTTGCTA GTATTTTGTG AAGAGTTTTT  
39151 GTATCTATGT TCATCAGAAA TATTGGCCTG TAGTTTCTT CTATGTGTGT  
39201 GTTCTTGTCT GGTTTTGTGA TCAGGTTGGT GCTGGCCTCA TAGAATGAGT  
39251 TAAGGAGAGT TCTCTCCTCT TCCATTTTTT AGAATAGTTT CAGGAGAAAT  
39301 TGGTATTAGT TCTTCTGGTA GAATTGTCA GTGAATTGT CCAGTCTGT  
39351 GCTTTTCTTC ATTGGGAGAC TTTTTTATTA CTGACTCAAT CTGCTACTC  
39401 ATTATTGGTC TGTTTCATGTT TTCTATTCTT TCCCAATTCA GTCTCAGCAC  
39451 ATTGTATGTT TCCTGGAAC TATCCATTTT CTCTAGGTTT ATCAGTTTGT  
39501 CAGCATACAG TTGTACATAA TGGTCTCTGG TAATCTTTTG TATTCTTAC  
39551 ATATATGACT TAATGTGTCC TTTTTCATTT CTAATTTGTT TGTTTGGGTC  
39601 TTCTACTTTT TTGGTTAGTC TAGCTGGCAG TTTATCAATT TAACAAAAAC  
39651 CAACTTTTTT AATCATGATG CTTTGTATTT TTTAGTCTGT ATTTCAATTA  
39701 GTTCTGTTCT TTATTACTTC CTTTTTCTGC TAATTTGGTA TTTGGTTTGT  
39751 TCTTGCTTTT CTAGCAGCTT CACATACATT ATTAGATTGT TAATTTGTCA  
39801 TTTTCTACT TTTTTCATGT AGGCATTTAT TGCTATAAGC TTGCCTCTTA  
39851 TGCTGCTTTT TGCTGATCC CACAGTTTAT TGTATGTTAT GTTTCAATTT  
39901 TCATTGTGTT CAAGAATTTT TTTTCTCTT AAATTCCTTA TTGACCATTG  
39951 GTTGTTTCAGG AGCATGTTGG TTAATTTTAA TGTATTTATG CAGTTTCTAA  
40001 AGTTCCTCTT GGTGTTTATT TATAGTTGAT TTGATTTTAT TGTGGCCTGA  
40051 GAATATCCTT GGTATGATTT TCATTGTGTT AAATTTATTG AGACATTTTG  
40101 TGGCCTGACA TATGGTCCAT CCTGGAGAAT ATTCCATGTG CTGATGAATG  
40151 TATATTCTGT AGTTGTTGGA TAGAATGTTT TGTAAATGTC TGTTTGGTTC  
40201 ATTTGGTCTA AAGTCCAGTT TAAGTCTAAT GTTTATTTGT TGATTTTCTG  
40251 TCTAGATTAT CTATCTAATG TTGACAGTGG GATGTTAAAG TTCCTTCCTA  
40301 TTATTGCACT GCAGTCTGTC TCTACCTTTA GATCTAGTAA TGTTTGCTTT  
40351 ATGAATCTGG ATGCTCCAGT ATTGGGTGCA TATATATTTA GGATTGTTAT  
40401 ATCTTTTTTG CTGGGTTGAT CTGTCATTAT ATAATGATAG TTTTAGTCCT  
40451 TTTTTCACCT TTTTGTATTT AATGCTGTTT TTGCTTATA TGATTATAGC  
40501 TAATCCTGCT CACTTTTGGT TTCCGTTTGT GTGAAATATC TTTATCAACC  
40551 CATTTCAGTC TTTACTAGTG AGGTGAGTCT CTTGTAAGTA  
40601 CTATGTAGTT GGATTATGTT TTTTAAGTCT ATTCATCCAG TGTATGTCTT  
40651 TTAAGTGGAA TATTTAATCT GTTTATGTTT ACATGTGAAG ACTTATTTCT  
40701 GTCATTTTGT TATTTTTTTC TGGTTGTTT GTATATTCTT TGTTTTTTTT  
40751 CTCTCTCTCT TGTCAATTTAT CATTACAGTT TGGTGGTTTT GTGTAGTGGT  
40801 AATATTTGAG TCCTTTATTT TCTTTATATC CAGGCAAGAA GGATGGCCAC  
40851 TATTCTCACA CTGGGAGCAG TGTATAAGTG ATTCAGCCTT TCCTTTCTTG  
40901 TTGGACTCCT TACCCTTCAG ACAAATTTCCA CATATAGCAT TTGGAATGAC

FIGURE 3, page 13 of 24





47251 47301 47351 47401 47451 47501 47551 47601 47651 47701 47751 47801 47851 47901 47951 48001 48051 48101 48151 48201 48251 48301 48351 48401 48451 48501 48551 48601 48651 48701 48751 48801 48851 48901 48951 49001 49051 49101 49151 49201 49251 49301 49351 49401 49451 49501 49551 49601 49651 49701 49751 49801 49851 49901 49951 50001 50051 50101 50151 50201 50251 50301 50351

ACTACAAAAA	CCCAGAAGAC	AACCTAGGCA	ATGCCATCCT	AGACATAGGA
ACAGGCAAAG	ATTTTCATGAC	AAAGATGTCA	AAAGCAATTG	CAACAAAAGC
AAAAATTGAC	AAATGGGATT	TAATTAAATG	AAAGAGCTTC	TACACAGCAA
AAGAAAACAT	CAACAGAGTA	AACAGACAAC	CTACAGAATG	GAAGAAAATT
TTTACAAACT	ATGCATCTAA	CAAAGGTCTA	ATATCCAGTG	TCTATAAGGA
GCTTAAATAA	ATTTACAAGA	AAAAAATCGC	ATTCAAATGT	GGGCAAAGGA
CATGAACAGA	TGAACAGACA	TACATGGGGC	AAATTAGCAT	ATGAAAAAAAG
CTCATTAGTG	ATCATTGGAG	AAATGCAAAT	CAAAACCACA	ATGATATAACC
ATCTCACACA	AGTCAGAATG	GCTAAAAATA	AAAATAAAAA	GTCAAGAAAT
AGCAGATGCT	GGCAAGGTTG	TGGAGAAAAG	CAAACACTTA	TACACTGTCA
GTGGGAGTGT	AAACTAGTGC	AACCATTGTG	GAAGATAGTG	TAGTGATTCT
TCAAAGAGCT	AACAGCAGAA	CTACCATTTG	ACCCAGCAAT	CCCATTACTG
GATATATACC	CAGAGGAATA	TAAATCATTC	TACCATAAAG	ACACGTGCAT
GAGAATGTTC	ATTGCAGCAC	TATTCACAAT	GACAAAGACA	TGGAATCAAC
CCAAATGCCC	ATCAATGACA	GACTGAATAA	AGAAAAGGTG	GTACATATAT
ACCATGGAAT	AGTAGGTAGC	CATAGAAAAG	AATGAGATCG	TGTCTTTTGC
AGGAACATGG	ATGGAGCTAC	AGGCTATTAT	TCTTAGCAAA	CTAACACAGG
AACAGAAATC	CAATACTACA	TGTTTCGCATA	TATAAGCGGG	AGCTAAATGA
TGAGAACTCA	TGAACACAAA	GAAGGGAACA	ATACACACTG	GGGTGTTCTT
GAGGTTGGAG	GGTTGGAGGA	GGGAAAGGAG	CAGAAAAGAT	AACAACCTGGG
TACTGAGCTT	AATACCTTGG	TGATGAAATA	ATCTGTACAG	CAAATTCCCA
TGACATGAGT	TCACTATGT	AACAAACCTT	CACATGTATC	CGAAACTAAA
ATAAATTTTT	TTAATGAAAT	AAATATGGTT	TTTGGGGGGC	CTCCTCTTTC
GGCTTTGGAG	CCCCCTCCC	TCTGTCTCGG	TATGGGGGAG	TTTCTTCCTT
CTGTCTTCTC	CCTTCCTTCT	TGCCTATTAA	ACTCTCCGCT	CCTTAAAACC
AAAAATAAAA	AAAAAGAAAG	AAAGAAATAT	GGTTTTTATT	TTTCTCACAT
AAGAAACTCA	GAATGAACCT	AGGATGATAG	CTCCGTAATT	TCATTAGGGA
TTTCAACTCC	TAATCTTTCT	TCTCTGCCAT	CCTTCAAGTG	AGGCTTCCAG
TCTCAAAGTT	AACCTATGGT	GACAATATGT	CTGCTGGAAC	TCCAGGCAAC
AGATCTAATA	TACAAGCCAG	CTCTAAGGAG	TTTTTACAGA	AGCCACACCC
AAAAATTTCC	ATTTACAGCT	CATTGTCCAG	AGGTAATTCA	TGTGGTTAGA
TCTAAGTAGT	GGTATATAAG	TGTGTTATCT	GCCATAGTTT	GGCCCTCTGA
CCACCCAAAT	AAATGTATGT	ATCCCTCTTC	TCACATATGG	AACACACAGT
TACTACAGTC	GGCTTAAAGT	CCAGTACCTT	TGGATGATGT	GCAATATCTC
CATTAGATCA	TAATGGTCAG	GCAGTCAAAT	ATATTAAAAA	TTATCTCCAC
49001	CCACTCTTTG	ACACACCCAT	TTTTTAAAGT	GAAGATTCTG
49051	ACAACCCACT	GGTTCATACT	AGTTCATAAT	AGTTACCATG
49101	GGACTGAAAT	ATTGTTTCTA	CGTTTTTATT	TTACAAACAC
49151	AATTGTCTTT	TTACAAGGCC	CTCCACAACG	GTTAGTCTTC
49201	GATATGGGAA	CCCTTCCATA	TGAACTTTGT	TTTATCTACT
49251	CTTGTAACAA	CCCCACATTA	ATGGAATGGG	TGGAGTAGGG
49301	CTCCATTCTT	TCATAAAGC	AATGAATAGG	CTGGCAAAAC
49351	AACCTTTTTCA	GAACTCTGGA	ATCTAAGCAA	AAATTACAGC
49401	ACACTTAATG	AATAAAAAAT	TTAAATTTCA	GTGAGAGTTC
49451	TTGGTTACCT	TGAGACCATC	CTCCAACCCT	CAGCCCATCA
49501	AAATGGCAGC	TTATATTGCA	GGTGCAGGTT	ACTGTTACCA
49551	TATTGACCTT	ATTTTCAATG	AACTGTGATT	GTGTAGTTTG
49601	TGGTTCCCTG	AAGGATTACC	TCAATGGTTT	ACCTTTTAT
49651	AGAGCTTCCC	CAGGCTGAG	GCACCTTCCC	TGGTGCTGGT
49701	ATTTTAAAGC	AAATGTATTA	GTCACAGCTA	CACAGAACAA
49751	CTGGGAAAAG	CAATAGACAA	ATGGAAAAAT	CCCAGGAAGG
49801	GTGGCTCATG	CCTGTAATCC	CAGCAGTTTG	GGAGGCCGAG
49851	CACCTGAAGT	CAGGAGTTCG	AGACCAGCCT	GACCAACATG
49901	ATCTCTACTA	AAAACACAAA	ATTAGCCAGG	CGTGGTGGTG
49951	ATCCCGACTA	CTCGGGAGGC	TGAGGCAGGA	GAATCGCTTG
50001	GCAGAGGTTG	TGGTGAGCCG	AGATTGCGCC	ATTGCACTCT
50051	TGGACAACAA	GAGCAAAACT	CCATCTCAAA	AAAAAATAAA
50101	GGGAGAAAGA	GGCTGAGATA	CTTGGGGGAT	GCTTAGGGAA
50151	CAAAACATTT	TATGTATTCT	GAGGACTATA	GAAGACTATG
50201	TTTCTAGATG	TGTGCTCACA	AAAGAACTGA	GAAGACTAGG
50251	TGGCTAAATT	TCAGGCACTG	CACAAGCAGA	AAATGAAGGC
50301	CTTTAAACTG	TATAGCTAAG	CAATGAAGGA	GAGCCCAATC
50351	CCCTCAAAAA	CTAAGAAAGC	TTTTTGTGTT	CATAGTTTGT

FIGURE 3, page 16 of 24

50401 TGCTTCCAGG AGTTTAATAA AATCTCTGTA AAATCAATAA CTGACTAAAG  
50451 CTAATGGAAC AAATATTTCA GAGGCCACAC ATACCAAAAA AATATAGGCT  
50501 TTACAAAAAT AGTTAAGAAA ATTAACATAA CCAACAACAA CCACAATAAG  
50551 CAGCAACAAC AAGACCAGGG GACTGGGAGA ATCAATCAGA TTTCCAGAGT  
50601 TTCTACATTA TAACATTCAA AACATCTGGT TTTCAAGAAA AAAAAAAAC  
50651 TGAGGCATGT GAGGAAACAA GAAAGTATGG CAAGGACAAA AAACCAAACA  
50701 CCGCATGTTC TCACTCATAG GTGGAAATTG AACAATGAGA ACACTTGGAC  
50751 ACAGGATGGA ACATCACACA CCGGGGCCTG TCGGAGGGTG GGGAGGGATA  
50801 GCATTAGGAG ATATACCTAA TGGGCGCAGC ACACCAACAT GGCACATGTA  
50851 TGCATATGTG ACAAACCTGC ATGTTGTGCA CATGTACCCT AGAACTTAAA  
50901 GTATAATAAA AAAAGAAATG AAAAAAATAC ATTGCATAGA AGAAATACGA  
50951 TCATACATTT ATAGCATTTA GCACAATTCC TGACATAATA AAATACTCAA  
51001 TAAAACAACA ACAACAAAAA GAAAAACCCA CAGCTGACAT TGTACTCAAT  
51051 AGTGAAGGAC TGAAGTTTTT CCCCTTAAGA TCAGAAACAA GACAAGGATG  
51101 TTCATTGTGG TTGGAAGAAA TAATTGATGT AATTTCAATC TTCTTAAGTG  
51151 GTTAAGAATT GTTTTGTGGC CTAACATATG ATCTATCCTG GTGAATATTC  
51201 TGTATGCACT TGAAATTAAT GTGTATTCTG CTACAGTTGC CCAAAATCTG  
51251 GGGTTGAAGA AGCCAGCTTA GTTCTGGGTC GGGCCTGAAG CCTGGGGCTC  
51301 TGTGGGTCAG CCTTTTTTGG ACTCGGTTGG AGCCTGGTCT GGGCCTGAAG  
51351 CCTGAGCTTG AATGGGCCAG CCTGAAATCT GGGGCCACCA GGGATGGCCT  
51401 GGAGTCTGTA CCCATGAGGG CTGTATTGGA GGCTGAATGT TTGGATGCTG  
51451 ACCTGGTACC TGTGGCCATG GGGGCCAGCC TGGAGCTGAG GTCCATGGGT  
51501 GTCAACGTGG CACTGGGACA GACCCAAAGC CTGGGAGTGT GAAGGCCAGC  
51551 CTGGAGCTGA GTTGGTCTGG ATACTGGGTC TGTGGGTATT GGCCTTAAAC  
51601 TGGGGTCCAA AGGTGCTAGT CTTGTGATGG AGAGGGCCTG AAAGCTGAGT  
51651 CTGGGGGTAC AGTGGCTGTC CTGAAGCAAA GGGGCTGTCT TGGAGGGGTG  
51701 CAAGCCTGGA GGTATGATCT GGTGCTGAAG GAAGTCTGGA GTCTGGGGCT  
51751 ACTGGCCCAG GGCTGGGAGA CTACATCTGC AGGGATGGCC TGGACATTGG  
51801 GGCTACAAGG GCTGGCCTAC TGCCCAAGTC TGTGGGGACC AGCCTAAAGT  
51851 CTGGGGTAAT CATGGCCTGT CCAGGGCTAG ACTTTACTGT GTTGGGCCCCA  
51901 GTGTTTGGGT CTGAGGCAAA GTCTGGTGTT CACTTACCTC TTCTTCTCCC  
51951 AAGCAAAGGG CATCTCTCTC CATACTGTGG GTTGGAGAAG GCATAACACA  
52001 GGTAATTTAA AACTGTCCCTG CTAAGGTGAA AAATAAAGCA AAAAAAGAGAA  
52051 GTAGTGATGT TAGGGAAAGG AGTGATGTTG CAACGTTACA ATTGAGCGTC  
52101 CAGAGAAAGG CTTCACTTAG AAAGAGATAC CCATGAAAAA GACCTGAAAG  
52151 AAAAGTGGGA GCAAGGGATG TCCATGTGTC CCCCTCACCT ACGGGCAGAC  
52201 CAAGTTAAAA GGCTCTGGGG TAGGAGCTTT CCAGGCCATAT TTGAATGGTA  
52251 GCAAGAAGGT CTGTGTCATA ATTGAGCGAG TGAGGGATAT GAGAGAAGAG  
52301 AGGTAAGGTG GGATCACATC ATGTGGATCC TTATAGGCTA CTGTAATGAG  
52351 TTAGGCTGTG ACTCGGTAAG ATGAGACGAC TGCAGACTAC TGAGTAGGGG  
52401 AAAGCCATCA CTCTGGCTTC TGGGTGGTTA ATAGACTGGG TGGGAAAGAA  
52451 GGTGGTTTAT ATCATGTGGG TCCTTGTAGA CCACTATGAG CACTTGGGCT  
52501 CTAACCTCTGA GATGAGGACA TTGCAGGCTA ATGAGTAGGG GAAAGACATG  
52551 ACATGACTTA CATTTTAACA TGATTGCTCT GTCTATGGGT GGAGAATATT  
52601 CCAGGTGTAT GAGGGACAAG TATGGGAATA GGGAGAATAG TCAGGAGGCT  
52651 GTTACAGTAA TATAGGCTTT GGAAGTGGCA GGGGCGCGGG GGTGGACAGA  
52701 TTCTGGATAC ATTTTGAAAG GTAAGCTGAC CAGAGTTGCT AATAGATCAA  
52751 ATGTGGAGTT AGAAGGAAAG AGAGGAATCA AGGAAGATAC CTAAGTTTTT  
52801 GACCTGACCA TTTCTAGCTT CCAGTGAATT TTTTTTTATG AAAAGGAATT  
52851 GAGTGTTTTA GCCTTTGTTT GTATTGTATA TATTTAAGGT ATATCACATG  
52901 ATGTCTTGAT ATACATATAT ATAGTGAAT GATTACTACA GTCAAGTAAA  
52951 TTAACATATC CATCGCTTCA TATAGTTATC TTTTTTATAT GGTAAGAGCA  
53001 CCTAAAATCT ACCCTTTGCA AATTTTCAGT ATACAATATT ATTAGTCCTC  
53051 ATATTATACA TTATATCTTC TAGACTTACT CATTCTACAT AACTGCAACT  
53101 TTGTACCCTC GACCTACATC TCCCTCTTTC CTACCCCCAC TGACCCGGTA  
53151 ATCACTGCTC TATTTCTTTT TCTATATATT TGACCTCTTA AAGATGCCAC  
53201 ACATAAGTGA GATCATGGAG TATTTGTCTT TCTGTGCCTG GCTTATTTCA  
53251 CTTAACATAA CGTCCTCCAG GCTCATCCAC GTTGTGCAA ATGACAGGAT  
53301 TTCATTCTTT TTAAGGCTGA TTAATATTCT ATTACATATA TATATATATA  
53351 TATATATATC TCACAATTTT TATATCCATT CATCTGTTGA TGGGAACTTA  
53401 GGTGTGTTCT ATATGTTAGC TTTTGTGAAT AATGCTGCAG TGAACATGGC  
53451 AGCAGAGATA TCTCCATGAG GTGCTGATT TTTATTGAAT ACTTTTCTGC  
53501 ATCTAGTCAT TATCAAATGG GTTTTCTTAT TTGATTTGTT AATGTGGTGA

FIGURE 3, page 17 of 24

53551 ATTATATTGG CTACTTTTTT CCCATTTTCT CCATCCTATT TATTCCACCA  
53601 TTTGTTTTAT AAGTTGTAAT ATTTGAAACC ATATTTTCT TTTCTTTTT  
53651 CTTTTTTTGA GACTGAGTTT CACTTGTCOC CCAGGCTGGA GTGCAATGGC  
53701 GCAATCTCAG CTCACTGCAA CCTCCACTTC CCAGCTTCAA GCAATTCTCC  
53751 TGCCTCAGCC TCCCAAGTAG CTGGAACACT AGGCGCCCGC CACCACGCCC  
53801 AGCTAATGTT TGTATTTTTA GTAGAGACAA GGTTCACCA TGTGGCCAG  
53851 GCTGGTCTCA AACTCCTGAC CTCAGGTGAT CCACCCACCT CAGCCTCCCA  
53901 AAGTGCTGGG ATTACAGGCA TGAGCCACTG CGCCTGGCCA AAACCATATT  
53951 TTTCTACTAC TCATGTCTGC AAATGTATTG TACTGACATT ATATCTTCTG  
54001 ACAATAGGC TTTTAGGAGC AAGTATGGAA ACCACCATT GAAACATTGT  
54051 TTCTACAGAT AAATGAGCTT TGGATTCCAG ACAACTGATT ACCCTGTGAA  
54101 CTTTAGAAAC CAAAGTGTTT TGAGATTGGA AAAAATATAA ACTTCTACTG  
54151 AGAGACTTCT AAGGGTGTTT AGTTTCCAGC ACAATGTTCC AGAACTTCCA  
54201 TTTTCAGTAT AGTGCAAGCT AGGGCACCTG GTCTCTGTCA TGTATGTGC  
54251 AAATGATAGT TGACGCATGT TTCTTTTTAA GGTACCCTCA CCTGAGTCCC  
54301 AAGTACAAGG AGTCTTTTGA TGTGGGCTGT AACCTCTTG CCAAGTTTTT  
54351 TGCATACATT AAGAATACAC AAAAGGAGGC AAATAAGAGT AAGATACCTT  
54401 TTCTTTAAAT CTCTATTTTT CTCTCACTCT TCATCTTCTC ACTCAGCAAA  
54451 AATAGAATTT TCCTGAATAT ATAGTATATT TTGGGGACTG GCCTAGTCTT  
54501 CCCCTCATTC TCTATACTCT CCTCTGAAAT TCCCTCGCAT GAAGTTGTAT  
54551 TAGATTTAGA ACTCAAGATT CAATATAGCT ATTACCAACC ATAGCTCAAT  
54601 TAGAATATTG ACATACTAGG TGTGAACTAA CTGCAGGACT GTGTACCTTT  
54651 AAGGTTTCTT AAAGTGTGGC ACCTACCATT TCCCATGAAC ATCTTAAAT  
54701 AGATTTATTA TCCTCTGAGT CACAAGAACT GTGTTTTTTC TTCACTTTC  
54751 TAACTCTTCT GATCACTTTT CTTTCTTCT TTTACTCTCC TGCCAATGCA  
54801 CCTCCTAAG AAAAGCCCAA AAGATTACA CTCACTATT CATCTTACTT  
54851 TGTCTTATCA GTGAGTAGCT GAGCATTCTA AATAGTTAAC TAGATATTGA  
54901 AGAGCCAGTG TAAGTAGTAT GTATAGATAG AGGTGTCTAA ATGTGTGGAA  
54951 AGCATATTTA GAATGATTTT AGTCAAAAGA CAATACATTT ACAAGTAACT  
55001 CTATTACTTC ATTGCTCAG ATTTTGAAAA ATCTCTGCTC AAAGAATTCA  
55051 AGCGTCTGGA TGACTACTTA AACACCCAC TTCTGGATGA AATTGATCCA  
55101 GACAGTGCTG AGGAACCCCA AGTTTCCAGA AGACTATTCT TGGATGGGGA  
55151 CCAGCTAACA CTGGCTGATT GTAGCTTGT ACCCAAGCTG AACATTATTA  
55201 AAGTAAGTCT TTATAAGGCA GGCTGAATGG GTGGGAGGGG TTTGCCAGTT  
55251 GCCAGCACA AGCATAGTGA CCTTCCAGTG CGGTATTATT ATATTATAGC  
55301 TTTGTCATTA TCATCATCAT CATGTGTAAT ATATACATCT CTTTCTCTT  
55351 TAGAGGGAAG TCCATAATG TTCTCTTCTG GGAAGTATTA AAACCTGTTT  
55401 CTTTTTTTTT CTTTTTTGAG ATAGGGTCTT GCTCTGTCAC CCAGGTGGA  
55451 GTGCAGTGGC ATGATCAAGG CTTATTGCAA CCCCCACCTC TGAGGCTCAA  
55501 GCAGTCTCC CACCCCACTC TTGAGTAGCT GGGACTACAG GTGCGTGCCA  
55551 CCACGCCTGG CTAATTTTTT GACTTTTTTG TAGAGACAGG GTTTCACCAT  
55601 GTTGACACAG CTGGTCTTGA ACTCCTGGGC TCAAGTGATC CGCCTGCCTT  
55651 GGCCTCCCAA AGTGTGGGA TTACAGGCGT GAGCCACCGT GCCCAGCCAA  
55701 AACTTGTTTC TTTCTTCTA AATCAGAAGG TATTTTCCAC TGTCTTATT  
55751 TGTAATAATA TTACCTATTT TACAGAATTG TTAAGAGAAT TAAATAAATT  
55801 AAAGCATTTA AAATGCTTAG AACAGTGCTT AGATCATAAT AGGGAATAAC  
55851 CAATTTGGGC TATTAGTATT ATGATGAATT AATCATAAAT TTAATAAATA  
55901 TTTATTGCAT AGACTTACAC AGAATTTACT CTTTGAGTCC TATGCCAAAC  
55951 ACAGAGAATA TGTAAAGAAA GAAGACATAG GACTCTAAAT AAACCTTAG  
56001 TCTAGTCGTG GTGGATATGT GCTCATTTTC TGTGGTTCCT TCCTCTAAAT  
56051 ATAGTCATAA TTAAATACAG AATCAATATC AACATGATTG TAAGCATGTA  
56101 GTTTTGTCAA CATTGTGAGA CAAAACATCA AAATAGTCCA AGATTCTGT  
56151 CTACTTCATA GTTATTTTTA TAGTGCTTTT TGTGTCGATA AGATGCCCTT  
56201 GATAATCTTG ACTTCTAAGA AACATTTCTA CATAGTAGGC ATATTACTGA  
56251 TGCCTTCTTT TTCCTCTTTT TTTTGCAAAA TTCTAGGTTG CTGCCAAGAA  
56301 ATATCGTGAC TTTGACATTC CAGCAGAATT CTCAGGAGTC TGGCGTTATC  
56351 TCCACAATGC CTATGCCCGT GAAGAATTTA CCCACACGTG TCCTGAAGAC  
56401 AAAGAAATTG AAAATACTTA CGCAAATGTG GCTAAACAGA AGAGTTAGGA  
56451 GAGCTCTTAC AGGAGAAAAG GCTATATTTG TGATCAGATT TTACTTATTG  
56501 ACATATTAGA AAGGTTTTTG CAAATAAGAA TATGAAAAAT ACTGTTTCTT  
56551 CTATCCAAC CTCTTATGAA AAGGAACCTT GTATTTTCTA TTAGCCATAA  
56601 ATAATCTGTC CACTGTATTT TACAGGTCTT CATACTTTTA CTTAATTTTC  
56651 TTTATCTGTA TGGCAAACCA CTGCAATCCT GAATGACATG GAAAGCATCA

FIGURE 3, page 18 of 24

56701 56751 56801 56851 56901 56951 57001 57051 57101 57151 57201 57251 57301 57351 57401 57451 57501 57551 57601 57651 57701 57751 57801 57851 57901 57951 58001 58051 58101 58151 58201 58251 58301 58351 58401 58451 58501 58551 58601 58651 58701 58751 58801 58851 58901 58951 59001 59051 59101 59151 59201 59251 59301 59351 59401

CAATCTTTTG CCCTTTGCTT GAATTCCTGG AATGCATACA TATAAGCTAA  
 ACAGATGTCT GCAGTTTATA ATGTCATAAG TAGAGGTACA ATCTCACCCCT  
 GTCCTTTAGA AACATTTCCA TATAAATCGC TAAAATAATT TCACATTTTT  
 GTTAGTTTAA TATATACATG AGTTTATTTT TGATATAAAT AATAAATACA  
 GAGAGTGAGC ATATCAGAGA GGCAAATCTT TAAAGAATGA TTTTAAAAAT  
 CAGCTCTAGG AAGAGCTCAA GATCAATTGG TCATAGAACA GCATTTGACG  
 CCTAGAACTA TGACCACCTC ATGGTCAGAG ATGAGAATGT AGCCTTTGTG  
 ACCAGATTAT ATTATTTTTA AATGAAGAAG CACTCATTA AAAAAACATA  
 ATTTTAAAAA ACAATATAAG AAACAAAGTC AACTGAATCT TTTATTCATA  
 GAAATGAAAA GGAAAAATAA AACTGTGGCT GACCAAAAGG TCTTCTTGTT  
 GTCCATAAAA GGATAAGGTA AACAGTCCTT AGATAATTAC AAAACTTTCT  
 ACAAAGTTA AAATGTTACA TTACTATACG TATTCAGATT CACTTGTTAA  
 AGTACTCTTA AATCATTCAA ATCTGGAAAC AAAAGCTGAA CTTAACTCTT  
 GCTCCCTCAA AAGAGAAACA CAAGCATAAG TGCAGCTTCA AAAAAGGAAA  
 ATATTTTAGG CTTTGGTGGA AGGGTGGAGT TTAGATAAAA TTAAATGAA  
 GTAGCGTTT AATAGGTTCA AAGAAAAGTA AGGCAATGAG CAAACTCAA  
 GTACTGTCTT TGAAAACCAT AGAGTCAAGA TAAATGTATA GTGTATGGTT  
 AGGTGGCAGA GAAATGCAAT CATGTTGATA ATCTTTGAGA TACATCCTGT  
 CATCAGTATA TTTCAGAATA CATGCAATGC ACTAGCAAGT TACAATTGAT  
 AGAATACATT TGAAATGTTA AATGAAATAA GCCAGGCACA GAAAGACAAA  
 CACCACATGA TCTCACTCAT ATGTGGAATT TAAAAAGTT GATCTCACTC  
 ATATGTGGAA TTTTAAAAAG TTGATCTCAC ACAAGTAGAG GGTAGAATCG  
 TGGTTACCAG GGGCTAGGGA GAGAAAAGAG GCAGAGGCAC TGAAAGATGT  
 TGGTCAATGG GTATAAAGTT ACACCTAGGA AGAATAAATT TTGGTATTCA  
 CCACAGTAGG GTGACTATAG CAAATAATAA TGTCAGATGT ATTTCAAGAT  
 AGCTAGAAAA GCAGTTTTTT AAATGTCACC ACAAGAAAT AACAAATGTT  
 TATAGTGGTG GATATGGTAA TTACGCCATAT TTGATCATT TACTGTGTGT  
 ACATGCATTG AAACACCACA TTGTATCCCA TATATATGTA CAATTATGTG  
 CCCATTATAC ATTTAAAAA TAAATTTTAA AAACCTTCAA TTAACCTTTG  
 GTTTAAAAGA AAAATATAAA CCAAAACTAC ATGATCTCTA AAACAAATAA  
 TGATGATGTA AACACTTCAT ATCAGAATCC ATGGGATAAA TATAAAGCAG  
 TGATCAGAGG AAATTTTATA ACTAAACACT GCTATTAGTA AAAATAAAAG  
 ATTGAAAATA AATTGATTAA ATATTGAACT AACAAAAATT TTTAAATGT  
 GCACAACAAT GTGAATATAC TTGACACTTC TCAACTCTCT GCTTCAAAAT  
 AGTTAAGGTG ATGAGTTTTA AGCTATGTGT TTTTAAACACA ACTTAAAAA  
 AAATGTCCAA ATGGATCTTG GTAGAGCACC AGCAAAAAAC AGAAAGAAAC  
 TTAGAATAAG TACAACAAT TAAGTAAAAG AACACAAGAG ATTAACAAAA  
 AAAGTAAGAA TTAACAAAAA GAATAGAAAT AGCATAGACC TAGTTAACGA  
 ATCAAACCC TTTATTTTTT AAAAGATTGA TAATACAGAC CAAACCATTA  
 GCTACATTAA TTGAAATAAA ACAGAGAAAG CAAAAGTATG CAAAATAAAG  
 AATGGGGAAA TAACTATTAG AAGAAATTTA AGACATTGTA AGAGACTACT  
 TTGCAGACCT CTGTGCAAAC AAATTTTCAA ATCTAGATGA TAGAGATAAT  
 TTCCTAGCAA AGTAAAGATT ACGAAAAACA ACTTTATTAG AGATATGAAA  
 ATTGAAGAGC TCAATCTTCA TAGAAGAAAG AGAGAACATT TTTTAAAAAG  
 AAGAAATAGA GAAAATTATA AGGAACTACT TACCAAAAAG TATCAATCCC  
 CAGATAGTTT CACAGGGAAA TGCTACCAA CTTTAAAAGA CCATATAGTC  
 TCAAAGTAAC TTGCGAAAC AGTGTCTCTT CTGGAATAA TAAAAACAAA  
 TATAAGAAA CTATACATAA ATATTGTACT CTAATTGGCA AAGTTGTTTC  
 TCAAGGGGAT ATGTGTAGAC AATTCTGAAA CAGCCATACA TGTATACTAA  
 GATTGAAAAA ATAAGTAAAT GAACTGTAGG TGGGAAGTAC AAATAATCAA  
 GAAGGCTAGG ATGAACTATG TGGTACTGGA TTCGATTGAG AGACATCGGT  
 ATGTACTCAA GTTTAACTTA ATATTGATAG AGGTGAATAG ATACAAAAAT  
 AATTACATGT GCGTATATAC ATGAGTCAGT ATACATATGT ATAGTTCCTA  
 GCCCTGTGTC CTGAGAGGGC CTAGAAGCAA TAGTACCCTA GTAGCAACAA  
 GCACACCCAA TGCTAAGACC TTGGATTCTA ATATCATTTCT CCAATA (SEQ ID NO:3)

**FEATURES:**

Start: 804  
 Exon: 804-860  
 Intron: 861-35378  
 Exon: 35379-35488  
 Intron: 35489-35613  
 Exon: 35614-35739

Intron: 35740-54281  
 Exon: 54282-54388  
 Intron: 54389-55020  
 Exon: 55021-55202  
 Intron: 55203-56286  
 Exon: 56287-56445  
 Stop: 56446

# CHROMOSOME MAP POSITION:

Chromosome X

## ALLELIC VARIANTS (SNPs) :

DNA

Position	Major	Minor	Domain
7107	T	C	Intron
7202	A	T	Intron
8661	C	A	Intron
21620	T	-	Intron
27314	G	A	Intron
44327	T	A	Intron
44460	T	G	Intron
44877	A	G	Intron
46148	G	A	Intron
48158	C	T	Intron
48717	C	T	Intron
48970	A	G	Intron
49592	T	C	Intron
49826	G	C	Intron
52861	T	G	Intron
54703	T	C A	Intron
55624	G	C	Intron
56467	C	A	Beyond ORF(3')
57895	C	T	Beyond ORF(3')

Context:

DNA

Position

7107 TTGAATAACTGTGGTGAAAGTGGGCATCCTTGTTATGTTCCCAATCTTAGAGGACAGGAT  
 TTCAGTTTTTGTCCATTTCAGTATAATACTAGCTATGGGTTTGTCATATATGGCTTTTATT  
 CTGTTGAGGTATGTTCCCTCTATACCCATGTTTTTGAGGGTTTTTGTGCATAAAGGGATG  
 TTTAATATTATCAAATGCTTTTTTCAGCAACAATTAATGATCATGAGGTTTTTGTTCCTT  
 CATTCTGTTGATATGATGTATCTCATTAAATTGATGTGTGTATGTTGAATCATTCTTGCAT  
 [T,C]  
 ACTGGAATAAATTGCACTTGGTCATGATAAATGATCTTTTGTTTTGTTTTGTTTTCACT  
 TTTAAGTACAGGGGTACATGTGCAGATTTGTTATATAGGTAAACTTGTGTCATGGGTGTT  
 TGTGTACAAATTATTCATCACCCAGGTATTAAGCCTAGTACCCATTAGCTATTTTTTTT  
 TTCTGAGTCCATGTATTCTCATCTTTTAGCTGCCACTTGTAAGTGAGAATGTGTGGTATT  
 TGGTTTTCTGTTGCTGCATTAATTTGCTAGGGATAATGGCTTCTAGCTCTGTTTCATGTTCT  
 [A,T]  
 TAGGTAACTTGTGTCATGGGTGTTTGTGTACAAATTATTTTCATCACCCAGGTATTAAG  
 CCTAGTACCCATTAGCTATTTTTTTTTTCTGAGTCCATGTATTCTCATCTTTTAGCTGCCA  
 CTTGTAAGTGAGAATGTGTGGTATTTGGTTTTCTGTTGCTGCATTAATTTGCTAGGGATA  
 ATGGCTTCTAGCTCTGTTTCATGTTCCATATAAAGGACATGATCTCATTCTTTTTTAAAAA  
 GTGACTTTATTTTATTTTAGTTACATAAATTACAAAATATCACTAAGTAAAAATAAAATC

7202 GGGTTTGTGCATATATGGCTTTTATTCTGTTGAGGTATGTTCCCTCTATACCCATGTTTTT  
 GAGGGTTTTTGTGCATAAAGGGATGTTAATATTATCAAATGCTTTTTTCAGCAACAATTA  
 AATGATCATGAGGTTTTTGTTCCTTCATTCTGTTGATATGATGTATCTCATTAAATTGATG  
 TGTGTATGTTGAATCATTCTTGCATCACTGGAATAAATTGCACTTGGTCATGATAAATGA  
 TCTTTTGTGTTTTGTTTTGTTTCACTTTTAAGTACAGGGGTACATGTGCAGATTTGTTAT  
 [A,T]  
 TAGGTAACTTGTGTCATGGGTGTTTGTGTACAAATTATTTTCATCACCCAGGTATTAAG  
 CCTAGTACCCATTAGCTATTTTTTTTTTCTGAGTCCATGTATTCTCATCTTTTAGCTGCCA  
 CTTGTAAGTGAGAATGTGTGGTATTTGGTTTTCTGTTGCTGCATTAATTTGCTAGGGATA  
 ATGGCTTCTAGCTCTGTTTCATGTTCCATATAAAGGACATGATCTCATTCTTTTTTAAAAA  
 GTGACTTTATTTTATTTTAGTTACATAAATTACAAAATATCACTAAGTAAAAATAAAATC



8661 TGCCAAAGGAGTCTAGTTGTTTGGTCGCGTAGCAGCTGCATGTTTAGATTGGAAGAAAT  
TGCCAAAGTGCTTTCAGTGTGGTCATACTATTTTACATTAAAACCAGCACTATTTCTGT  
GCATTCTTACCAGCATTTTGTGTGTCACTATTATTATCTTAACTATTTTGAAAGCTGTG  
TAGTGACATTTTATTGTTTAAATTTGCATTTCCCAAAGGCTAATAAAATTGAACATTTT  
GTCTGCTTATTTGTCATCTGCATGTCTCTTCAGTGCAATGTCTGTCCATGTCTTTGCT  
[C, A]  
ATTTTCTTTTTTCTTTTTTATTTTAGAGTATTTAGTTGGCAAATAAAGATTGTATATAT  
TCAATGTATACAACACAATGATTTTGTTCCTTTTAAAAAGAATTATTTATTTTCAATG  
GGTTTTTGGGGAACAGGTGAAGTTTGGTTACATGAATAAGATATATAGTAGTGATTTGAG  
AGATATTGGTGCATCCGTACCCCAAGCAGTGACACTGTACCCCAATGTGTAGTCTTTTAT  
CTTCACTCCCCACCCCTTTCTCTGAGTCTTCAAAGTCCATTGTATCATTCCTATGCCTT

21620 TGTGTATATGTACCACATTGTCTTTATCCAGTCTACCATTGATGGGCATTTAGGTTGATT  
CCATGTTTTTGCTATTGTGAATAGTGTGTCAGTGAGCATGTGTGCATGCATCTTTATGAT  
AAAATAATTTATATCTCTTTGGGTAGATACCCAGTAATAGGATTGCTGGGTAAATGGTA  
GTTCTATTTTTTAGGTCCTTTAAGAAAATGTCACACTGCTTTCCACAATAGTTGAACATAAT  
TAGACTCCCACTTAACAGTGTCTGTGTTCCCTTTTCCCTGCAACTTTGACAGTAGTTTTG  
[T, -]  
TTTTTTTTTTTTTTTTTTTGCCCTATTTATATAGAGAGGTGGCATTTTGTATGTATCCTG  
GGCTGGTCTAGAATCCTGGGCTCAAGTGATCCATCCTCCCTCCGTGGCATCCCAAAGTG  
CTAGGATTGCAGGCATGAGCCATGGTGCCAGCCTATTTTGAATTTTAAATCATAGCCA  
TTCTGACTGCGTGAGATGGTGTCTCATTCTGGTTTTGATTGAATTTCTCTAATTATCAG  
GGGTGTTGAACTTTTTTTTTCATACGCTCATTTGGCCACATGCATGTCTTCTTTGAAAAGT

27314 CTCACGTCAACCTCTGCCTCCAGGGTTCAAGCAATTCTCCTGCCTCAGCCTGCCAAGTAG  
CTGGGATTACAGGAGCCACCACCATGCCAGCTAATTTTGTAGTAGAGATGGGGTTTCAT  
CATGTTGCTCAGGCTGGTCTCGAACCCCTGACCTCAAGTGATCTGCCTGCCTCAGCCTCC  
CAAAGTGCTAGGATTACAGGCATGAGCCACCACACTTGGCGTCTCTTGCCATTTTTAA  
GTTGGGTAGTTAGTTGTTGAGTTGTGTTCTTTATTTGTATTTTATATGTTATAGATACA  
[G, A]  
GACTTTTTTATTTTCTTAATAATCTTTTGAAGCAGGACATTTTATTTTGTCTCTATC  
CCAGCTTATTGAATTTTTCTCTCTCTCCCTCCTCTGAATTCAGTGACATTGACCTTCT  
TTCAGTTCTTTATACATGCCATGCTCAAGCCTATTGCAAGACCTTTGCACATGTTATTC  
CTGTTTAGAATGCCCTCTTCGTGCCATTCTCTAATTAACCTGTTACTTATCCTTTGAAC  
TTAGTTTAAATGCTACTTCTCAGGGAAGGCCTTCCCTGACAGACCCCATATAGATTCT

44327 AAAGTCCAGCTTTCAATACAGGAGAACTGAAATCATTCCATGTTGATATAAAGTAGGGAA  
AAAATTGTAATTTTTGAAAATAGCACTTGTCACTTCTATGTAATTTTAAATTAATGTT  
ACATAAGAGTCATGATTTCTATTTTGAATTAAGCTAGAAAAGAGTTCAACATAATGTT  
TAATTTTGTCACTGTTTTTATAGTGTTGATTCTACACTTTCACATACTTGTAAAAAT  
TTATACAATTGAGCCAGTTCTAGAAAAGTCTGATGTCTCGAAGGATAAACTTACTACTTC  
[T, A]  
TGTAGGACAGAAAGACCTTAAAATATTCTTATCACTTAATGAATATGTTAAAGACCAGGC  
TAGAGTATTTTCTAAGCTGGAACTTAGTGTCCTCGGAAAAGGCCAGAAGTTGCTTATT  
CTGAGTAGCTGTGCTAACTCTGTGCACTATAGGATCATCTCTGCAACTTTTAGAAATAG  
TGCTTTATATTGCAGCAGTCTTTTATATTGACTTTTTTTTAAACAGCATTAAAATTGCA  
GATCAGCTCACTCTGAACTTTAAGGGTACCAGATATTTCTATACTGCAGGATTTCTGA

44460 GATTTCTATTTTTGACTTAAAGCTAGAAAAGAGTTCAACATAATGTTTAAATTTGTCACA  
CTGTTTTTATAGTGTTGATTCTACACTTTCACATACTTGTAAAAATTTTATACAATTGAG  
CCAGTTCTAGAAAGTCTGATGTCTCGAAGGATAAACTTACTACTTTCTTGTAGGACAGAA  
AGACCTTAAATATTTCTATCACTTAATGAATATGTTAAAGACCAGGCTAGAGTATTTTC  
TAAGCTGGAACTTAGTGTCCTCGGAAAAGGCCAGAAGTTGCTTATTCTGAGTAGCTGT  
[T, G]  
CTAACTCTGTGCACTATAGGATCATCTCTGCAACTTTTAGAAATAGTGCTTTATATTGC  
AGCAGTCTTTTATATTGACTTTTTTTTAAACAGCATTAAAATTGCAGATCAGCTCACTC  
TGAACTTTAAGGGTACCAGATATTTTCTATACTGCAGGATTTCTGATGACATTGAAAGA  
CTTTAAACAGCCTTAGTAAATATCTAAGGCTCTGTGAAGCCAAACATTTATGTTGAGAT  
TGAAATTTAAATTAATATCATTCAAAAGGAAATAAAAAATGTTGAAAGAGTTTTAAAAAT

44877 ACTCTGAACTTTAAGGGTACCAGATATTTTCTATACTGCAGGATTTCTGATGACATTGA  
AAGACTTTAAACAGCCTTAGTAAATATCTAAGGCTCTGTGAAGCCAAACATTTATGTTT

FIGURE 3, page 21 of 24

AGATTGAAATTTAAATTAATATCATTCAAAAGGAAATAAAAAATGTTGAAAGAGTTTAA  
 AAATCAGGATTGACTTTTTTCTCCAAAACCATAACATTTATAGGCAAATGTGTTCTTTGT  
 CACTTCTGAACAAATATTAGATTAAAAATTACTTTAAAGTCTAGTATTTAACAGGCTA  
 [A, G]

CACAGATAAACACCTTAATAATCTCCTTTCAATTAATATTGTATTTCAAACCACATTTAA  
 CTGCTCTTCTAATGCTTTGCATTTTCAGTTACAACCTAGAGAGATTTTGAGCCTCATATTT  
 CTTTGATACTTGAAATAGAGGAAGCTAGAATACTTCATGTTTAGTCTGTTAAACCTGCTA  
 CAAAACCATAACTTTGAGGCATTTTCTAAATGAGCTGTGGGGATCCAGGATTTGTAATT  
 TATTGATCTAACTTTATGCTGCGTAAATCAGTTATCAGAAATGCACATTTCATAGGGTG

46148 ATTTAGAAAGTGAATGTTTTTCTGTACCATCTATGTGCAATTATACTCTAAATCCACTAC  
 ACTACATTAAAGTAAATGGACATTCCAGAATATAGATGTGATTATAGTCTTAACTAATT  
 ATTATTAACCTATGATTGCTGAAAATCAGTGATGCATTTGTTATAGAGCATAACTCATC  
 ATTTACAGTATGTTTTAGGTGGCATTATCATACCTAGACAATGAATAACATATCCCAAT  
 AAATTTATATAGCAGTGAAGAATTACATGCCTTCTGGTGGACATTTTATAAGTGCATTTT  
 [G, A]

TATCACAATAAAAAATTTTTCTCAAAGAAAACCCCATACTCTCAACCCAATAGGTCCTTC  
 AGCTGATAAACAACTTTGGCAAAGTTTCAGGATGCAAAATCAATGTACAAAATCACTTG  
 CATTTCTATACATCAACATCAGCCAAGCTGAGAGCCCAATTGGGAAGGCAATCCCATTC  
 CAATTGCCACACACAAAAAATAAAATACCTGGGAATACAGCTAACTCAGGAGGTGAAGG  
 ATATCTACAATGAGAATTACAAAACACTGCTCAAAGAAATAAGAGAAGACACAAACAAAT

48158 ACCCAGAGGAATATAAATCATTCTACCATAAAGACACGTGCATGAGAATGTTCAATTGCAG  
 CACTATTCACAATGACAAAGACATGGAATCAACCCAAATGCCCATCAATGACAGACTGAA  
 TAAAGAAAAGGTGGTACATATATACCATGGAATAGTATGTAGCCATAGAAAAGAATGAGA  
 TCGTGTCTTTTGCAGGAACATGGATGGAGCTACAGGCTATTATTCTTAGCAAACTAACAC  
 AGGAACAGAAATCCAATACTACATGTTTCGCATATATAAGCGGGAGCTAAATGATGAGAAC  
 [C, T]

CATGAACACAAAGAAGGGAACAATACACACTGGGGTGTCTTGAGGGTGGAGGGTTGGAG  
 GAGGGAAAGGAGCAGAAAAGATAACAACCTGGGTACTGAGCTTAATACCTTGGTGATGAAA  
 TAATCTGTACAGCAAATCCCATGACATGAGTTCACCTATGTAACAAACCTTCACATGTA  
 TCCGAACTAAAATAAATTTTTTAATGAAATAAATATGGTTTTTGGGGGGCCTCCTCTT  
 TCGGCTTTGGAGCCCCCTCCCTCTGTCTCGGTATGGGGGAGTTTCTTCTTCTGTCTTC

48717 TCCCTCTGTCTCGGTATGGGGGAGTTTCTTCTTCTGTCTTCTCCCTTCTTCTTGCCTA  
 TTAAACTCTCCGCTCCTTAAACCAAATAAAAAAAGAAAGAAAGAAATATGGTTTTT  
 TATTTTCTCACATAAGAACTCAGAAATGAACCTAGGATGATAGCTCCGTAATTTTATTA  
 GGGATTTCAACTCCTAATCTTTCTTCTCTGCCATCCTTCAAGTGAGGCTTCCAGTCTCAA  
 AGTTAACTCATGGTGACAATATGTCTGCTGGAACCTCAGGCAACAGATCTAATATACAAG  
 [C, T]

CAGCTCTAAGGAGTTTTCACAGAAGCCACACCCAAAAATTTCCATTTACAGCTCATTGTC  
 CAGAGGTAATTCATGTGGTGTAGATCTAAGTAGTGGTATATAAGTGTGTTATCTGCCATAG  
 TTTGCCCTCTGACCACCCAAATGAATGTATGTATCCCTCTTCTCACATATGGAACACAC  
 AGTTACTACAGTGGGCTTAAAGTCCAGTACCTTTGGATGATGTGCAATATCTCCATTAGA  
 TACTAATGGTCAGGCAGTCAAATATATTAAAAATTATCTCCACCCACTCTTTGACACACC

48970 TGACAATATGTCTGCTGGAACCTCCAGGCAACAGATCTAATATACAAGCCAGCTCTAAGGA  
 GTTTTTCACAGAAGCCACACCCAAAAATTTCCATTTACAGCTCATTGTCCAGAGGTAATTC  
 ATGTGGTTAGATCTAAGTAGTGGTATATAAGTGTGTTATCTGCCATAGTTTGCCCTCTG  
 ACCACCCAAATAAATGTATGTATCCCTCTTCTCACATATGGAACACACAGTTACTACAGT  
 CGGCTTAAAGTCCAGTACCTTTGGATGATGTGCAATATCTCCATTAGATACTAATGGTCA  
 [A, G]

GCAGTCAAATATATTAAAAATTATCTCCACCCACTCTTTGACACACCCATTTTAAAGT  
 GAAGATTCGATAACACCCCAACAACCCACTGGTTCATACTAGTTCATAATAGTTACCATG  
 ACTTGAAAAAGGACTGAAATATTGTTTCTACGTTTTATTGTTACAAACACTGCTAAAAGG  
 AATTGCTTTTTTACAAGGCCCTCCACAACGGTTAGTCTTCCATATTGCTGGATATGGGAA  
 CCCTTCCATATGAACTTGTTTTATCTACTTTTTTAAAGCCTTGTAACACCCACATTA

49592 ATTCAGAACTCCATTTCTTTCATAAAAGCAATGAATAGGCTGGCAAACGTGCAGAAGCA  
 ACTTTTTCAGAACTCTGGAATCTAAGCAAAAATTACAGCAGCCAGGAGAACCTTAATGA  
 ATAAAAATTTAAATTTTCAGTGAGAGTTCTGTGGCATTTTTGGTTACCTTGAGACCATCC  
 TCCAACCTCAGCCCATCAATAGTCTTAAAAATGGCAGCTTATATTGCAGGTGCAGGTTA  
 CTGGTACCAGAGGAAGCGATATTGACCTTATTTTCAATGAACGTGATTGTGTAGTTTGA

FIGURE 3, page 22 of 24

[T, C]  
 CTATCTGGTGGTTCCTCGAAGGATTACCTCAATGGTTTACCTTTTTATCACCTGCACTAG  
 AGCTTCCCCAGGGCTGAGGCACCTTCCCTGGTGCTGGTTGTGGAAAGAATTTTAAAGCAA  
 ATGTATTAGTCACAGCTACACAGAACAAGGAATAACATCTGGGAAAAGCAATAGACAAAT  
 GGAAAAATCCCAGGAAGGGCCAGGCGCGGTGGCTCATGCCTGTAATCCCAGCAGTTTGGG  
 AGGCCGAGGCGGGCAGGTCACCTGAAGTCAGGAGTTCGAGACCAGCCTGACCAACATGGA

49826 AGGTTACTGGTACCAGAGGAAGCGATATTGACCTTATTTTCAATGAACTGTGATTGTGTA  
 GTTTGACCTATCTGGTGGTTCCTCGAAGGATTACCTCAATGGTTTACCTTTTTATCACCT  
 GCACTAGAGCTTCCCCAGGGCTGAGGCACCTTCCCTGGTGCTGGTTGTGGAAAGAATTTT  
 AAAGCAAATGTATTAGTCACAGCTACACAGAACAAGGAATAACATCTGGGAAAAGCAATA  
 GACAAATGGAAAAATCCCAGGAAGGGCCAGGCGCGGTGGCTCATGCCTGTAATCCCAGCA  
 [G, C]

TTTGGGAGGCGGAGGCGGGCAGGTCACCTGAAGTCAGGAGTTCGAGACCAGCCTGACCAA  
 CATGGAGAAACCCCATCTCTACTAAAAACAAAAATTAGCCAGGCGTGGTGGTGCATGCC  
 TGTAAATCCCAGCTACTCGGGAGGCTGAGGCAGGAGAATCGTTGAACCTGGGAGGCAGAG  
 GTTGTGGTGAGCCGAGATTGCGCCATTGCACTCTAGCCTGGGCATGGACAACAAGAGCAA  
 AACTCCATCTCAAAAAAAAAAAAAAAAAATCCCAGGGAGAAAGAGGCTGAGATACTTGGG

52861 CATTTTAACATGATTGCTCTGTCTATGGGTGGAGAATATTCAGGTGTATGAGGGACAAG  
 TATGGGAATAGGGAGAATAGTCAGGAGGCTGTACAGTAATATAGGCTTTGGACTGGGCA  
 GGGGCGCGGGGTGGACAGATTCTGGATACATTTTGAAGGTAAGCTGACCAGAGTTGCT  
 AATAGATCAAATGTGGAGTTAGAAGGAAAGAGAGGAATCAAGGAAGATACCTAAGTTTTT  
 GACCTGACCATTTCTAGCTTCCAGTGAATTTTTTTTTATGAAAAGGAATTGAGTGTTTTA  
 [T, G]

CCTTTGTTTGTATTGTATATATTTAAGGTATATCACATGATGTCTTGATATACATATATA  
 TAGTGAAATGATTACTACAGTCAAGTAAATTAACATATCCATCGCTTCAATATAGTTATCT  
 TTTTTATATGGTAAGAGCACCTAAAATCTACCCCTTGCAAATTTTCAGTATACAATATTA  
 TTAGTCCCTCATATTATACATTATATCTTCTAGACTTACTCATCTACATAACTGCAACTT  
 TGTACCCTCGACCTACATCTCCCTCTTTCCTACCCCACTGACCCGGTAATCACTGCTCT

54703 CTTTAAATCTCTATTTTCTCTCACTCTTCATCTTCTCACTCAGCAAAAAATAGAATTTTC  
 CTGAATATATAGTATATTTTGGGGACTGGCCTAGTCTTCCCCTCATTCTCTATACTCTCC  
 TCTGAAATTCCTCGCATGAAGTTGTATTAGATTTAGAAGTCAAGATTCAATATAGCTAT  
 TACCAACCATAGCTCAATTAGAATATTGACATACTAGGTGTGAAGTAACTGCAGGACTGT  
 GTACCTTTAAGGTTTCTTAACTGTGGCACCTACCATTTCCCATGAACATTCTTAAATAG  
 [T, C, A]

TTTATTATCCTCTGAGTCACAAGAACTGTGTTTTTCTTTCACTTTCTAACTCTTCTGAT  
 CACTTTTCTTTCTTTCTTTTACTCTCCTGCCAATGCACCTCCCTAAGAAAAGCCCAAAG  
 ATTAACACTCACTATTTCTATCTTACTTTGTCTTATCAGTGAGTAGCTGAGCATTCTAAAT  
 AGTTAACTAGATATTGAAGAGCCAGTGTAAGTAGTATGTATAGATAGAGGPTCTAAATG  
 TGTGGAAAGCATATTTAGAATGTATTTAGTCAAAAGACAATACATTTACAAGTAACTCTA

55624 GTGTACTATATACATCTCTTTTCTCTTTAGAGGGAAGATCCATAATGTTCTCTTCTGGGA  
 AGTATTAATAACTTGTTTCTTTTTTTTTCTTTTTTGAGATAGGGTCTTGCTCTGTACCCCA  
 GGTGGAGTGCAGTGGCATGATCAAGGCTTATTGCAACCCCACTCTGAGGCTCAAGCA  
 GTCCTCCCACCCCACTCTGAGTAGCTGGGACTACAGGTGCGTGCCACCACGCTGGCTA  
 ATTTTTGTACTTTTTGTAGAGACAGGGTTTACCATGTTGCACAGGCTGGTCTTGAAC  
 [G, C]

CTGGGCTCAAGTGATCCGCCTGCCTTGGCCTCCCAAAGTGTGGGATTACAGGCGTGAGC  
 CACCGTGCCAGCCAAACTTGTTTCTTTCTTTCTAAATCAGAAGGTATTTTCACTGTC  
 TTATTTTGAATAATATTACCTATTTTACAGAATTGTTAAGAGAATTAAATAAATTAAAG  
 CATTTAAATGCTTAGAACAGTGCCTAGATCATAATAGGGAATAACCAATTTGGGCTATT  
 AGTATTATGATGAATTAATCATAAATTTAATAAATATTTATTGCATAGACTTACACAGAA

56467 TTTATAGTGCTTTTTGTGTCGATAAGATGCCTTTGATAATCTTGACTTCTAAGAAACATT  
 TCTACATAGTAGGCATATTACTGATGCCTTCTTTTCTCTTTTTTTTGCAAAATCTAG  
 GTTGCTGCCAAGAAATATCGTGACTTTGACATTCAGCAGAAATCTCAGGAGTCTGGCGT  
 TATCTCCACAATGCCTATGCCCGTGAAGAATTTACCCACACGTGCTCTGAAGACAAAGAA  
 ATTGAAATACTTACGCAATGTGGCTAAACAGAAGAGTTAGGAGAGCTCTTACAGGAGA  
 [C, A]

AAGGCTATATTTGTGATCAGATTTTACTTATTGACATATTAGAAAGGTTTTTGCAATAA  
 GAATATGAAAATACTGTTTCTTCTATCCAACCTCTCTATGAAAAGGAACCTCTGTATTTT

FIGURE 3, page 23 of 24

CTATTAGCCATAAATAATCTGTCCACTGTATTTTACAGGTCTTCATACTTTTACTTAATT  
TTCTTTATCTGTATGGCAAACCACTGCAATCCTGAATGACATGGAAAGCATCACAATCTT  
TTGCCCTTTGCTTGAATTCCTGGAATGCATACATATAAGCTAAACAGATGTCTGCAGTTA

57895

TCCTGTCATCAGTATATTTTACAATAACATGCAATGCACTAGCAAGTTACAATTGATAGAA  
TACATTTGAAATGTTAAATGAAATAAGCCAGGCACAGAAAGACAAACACCACATGATCTC  
ACTCATATGTGGAATTTTAAAAAGTTGATCTCACTCATATGTGGAATTTTAAAAAGTTGA  
TCTCACACAAGTAGAGGGTAGAATCGTGGTTACCAGGGGCTAGGGAGAGAAAGAAGGCAG  
AGGCACTGAAAGATGTTGGTCAATGGGTATAAAGTTACACCTAGGAAGAATAAATTTTGG  
[C,T]  
ATTCAACACAGTAGGGTGACTATAGCAAATAATAATGTAGCATGTATTTCAAGATAGCTA  
GAAAAGCAGGTTTTTAAATGTCACCACAAAGAAATAACAAATGTTTATAGTGGTGGATAT  
GGTAATTACGCCTATTTGATCATTATACTGTGTGTACATGCATTGAAACACCACATTGTA  
TCCCATATATATGTACAATTATGTGCCCATTTATACATTTAAAAAATAAATTTTAAAAACC  
TTCAATTAACCTCTTGGTTTAAAGAAAAATATAAACCAAACTACATGATCTCTAAAAACA

Figure 3, page 24 of 24